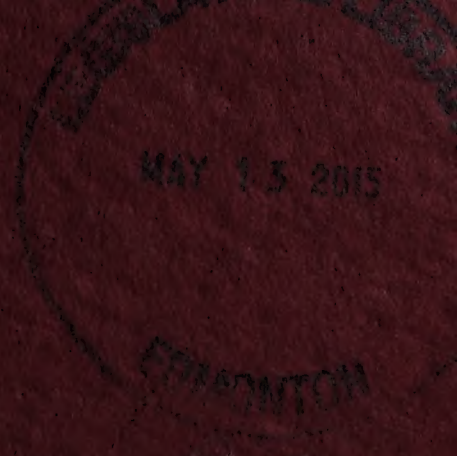


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THE PROVINCE OF ALBERTA

*Alberta Conservation Board*

THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

NATURAL GAS RESERVES OF THE PROVINCE OF ALBERTA

and

OTHER RELATED DATA

January 31, 1957





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## The Petroleum and Natural Gas Conservation Board

### I. THE ESTABLISHED RESERVES OF NATURAL GAS IN THE PROVINCE OF ALBERTA

The last report of the Board's findings with respect to the estimated natural gas reserves of the Province of Alberta was published on November 30, 1955. The report showed that the estimated disposable reserves as at June 30, 1955 were 15.6 trillion cubic feet (not corrected for 1955 production). With the further development of existing reserves and the discovery of new pools since June, 1955, the Board's studies and certain submissions from industry indicate a considerable increase in the disposable gas reserves. These reserves as of September 30, 1956 are estimated to be 18.3 trillion cubic feet, an increase of 2.7 trillion cubic feet over those estimated in the November, 1955 report.

The Board's studies show that about half of the 2.7 trillion cubic feet increase is attributable to new discoveries and the balance to expansion of previously known reserves. The discoveries in the Windfall, Hussar, Wimborne and Crossfield areas account for more than half of the increase due to new discoveries, whereas, the increases in the previous reserve estimates for Harmatton-Elkton, Westeros South, Medicine Hat, Homeglen-Rimbey, Bindloss and Savanna Creek account for the majority of the increase due to expansion of previously known reserves. Partially offsetting the increase in the latter classification are substantial decreases in the reserves previously attributed to the Pembina and Pincher Creek fields.





The total disposable natural gas reserves of 18.3 trillion cubic feet may be classified as follows:

a) Reserves presently considered within economic reach	16.5 T.C.F.
b) Reserves presently considered to be beyond economic reach	1.1 T.C.F.
c) Reserves subject to lengthy deferment due to the production of oil, or due to reinjection	<u>0.7</u> T.C.F.
Total Reserves	18.3 T.C.F.

Table I-1 lists individually all reserves estimated by the Board to be 10 Bcf or greater, plus, some smaller reserves which are available for local use. In addition, the table shows reserves, totalling 197 Bcf, of 39 small areas whose individual reserves are less than 10 Bcf, and which are presently considered to be within economic reach. Shown also are reserves, totalling 420 Bcf, of 115 small areas whose reserves are less than 10 Bcf and which at present are considered to be beyond economic reach.

A brief description of Table I-1 is as follows:

<u>Column</u>	<u>Presents</u>
1.	Name of field or area. The location of the fields and areas are shown in Figure I-1.
2.	Geological formation or zone from which gas is obtained. The Stratigraphic relationship of the formations is shown in Figure I-2.
3.	Estimated original gas in place expressed in billions of cubic feet at standard conditions.





<u>Column</u>	<u>Presents</u>
4.	Discount to be applied to original gas in place (Column 3) to account for the gas left in the reservoir at abandonment.
5.	Discount to be applied, after that for reservoir loss, to account for surface loss. This factor includes (where applicable) allowance for gas flared, operational loss, field and/or plant fuel, and processing shrinkage attending the removal of carbon dioxide, hydrogen sulphide, propane and butanes plus.
6.	Estimated disposable gas reserves as at September 30, 1956 expressed in billions of cubic feet at standard conditions.
7.	Comments of specific application to individual fields.





TABLE 1 - 1

## THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

ESTABLISHED RESERVES OF NATURAL GAS IN THE PROVINCE OF ALBERTA, SEPTEMBER 30, 1956. (3)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
ACHESON	VIKING	13.2	20	5	10.0	
	BLAIRMORE	73.2(1) 72.8(11)	25	10	49.0	RESERVES ADJUSTED BY 1.1 FACTOR TO CONVERT TO 1000 B.T.U. BASIS. (1) ORIGINAL (11) LESS 0.4 PRODUCED TO JUNE 30, 1956.
	LEDUG (D3) SOLUTION	90.1(1) 85.3(11)	45	25	33.6	RESERVES ADJUSTED BY 1.2 FACTOR TO CONVERT TO 1000 B.T.U. BASIS. (1) ORIGINAL (11) LESS 4.8 BCF PRODUCED TO JUNE 30, 1956. RESERVOIR LOSS HIGH DUE TO PROPOSED WATER INJECTION.
ALEXANDER	BASAL BLAIRMORE	35.1	10	5	30.0	
ALHAMBRA	CARDIUM SOLUTION	13.2	20	5	10.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
ASHMONT	LOWER CRETACEOUS	13.2	20	5	10.0	POSSIBLE LOCAL SUPPLY.
ATHABASCA	LOWER CRETACEOUS	5.6(1) 4.9(11)	20	5	3.6	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.7 BCF PRODUCED TO JUNE 30, 1956.
ATHABASCA EAST	WABAMUN (D1)	2.1(1) 1.8(11)	25	5	1.2	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
ATLEE-BUFFALO	VIKING	98.2	25	5	70.0	
	BASAL BLAIRMORE	92.0	20	5	70.0	
BEAVER CREEK	WABAMUN (D1)	26.2	10	15	20.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
BEAVERHILL LAKE	VIKING	63.1	20	5	48.0	SUPPLIES LOCAL UTILITY SYSTEM.
	BLAIRMORE	2.5	15	5	2.0	





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE(5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
BELLOY	CADOTTE	4.2	25	5	3.0	
	NOTIKWIN	9.2	20	5	7.0	
	GETMING	61.8	15	5	50.0	
	MISSISSIPPIAN	20.8	20	10	15.0	
BELLSHILL LAKE	VIKING	2.8	25	5	2.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BASAL BLAIRMORE	46.8	10	5	40.0	
BINDLOSS	VIKING	210.5	10	5	180.0	
	BASAL BLAIRMORE	24.8	15	5	20.0	
BITTERN LAKE	VIKING	1.4	25	5	1.0	
	BLAIRMORE	31.0	15	5	25.0	
BLACK BUTTE	BOW ISLAND	14.0	10	5	12.0	
	ELLIS (RIBBON)	5.9(4) 3.3(11)	20	5	2.0	(1) ORIGINAL (11) LESS 2.6 BCF PRODUCED TO JUNE 30, 1956.
	ELLIS (SAWTOOTH)	17.2(j) 12.1(11)	20	5	8.2	(1) ORIGINAL (11) LESS 5.1 BCF PRODUCED TO JUNE 30, 1956.
	RUNDLE	13.8	15	15	10.0	
BOLLOQUE LAKE	VIKING	4.2	25	5	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	11.8	20	5	9.0	
BONNIE GLEN	LEDUC GAS CAP	482.5	10	15	369.0	DEFERRED UNTIL MOST OF OIL IS PRODUCED. ADJUSTED BY 1.23 FACTOR TO CONVERT TO 1000 B.T.U. BASIS.
	LEDUC SOLUTION	659.0(4) 634.8(11)	35	30	283.0	(1) ORIGINAL (11) LESS 24.2 BCF PRODUCED TO JUNE 30, 1956. ADJUSTED BY 1.23 FACTOR TO CONVERT TO 1000 B.T.U. BASIS





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
BONNYVILLE	COLONY	5.2(1) 4.6(11)	20.0	5	3.4	(1) ORIGINAL (11) LESS 0.6 BCF PRODUCED TO JUNE 30, 1956.
BOW ISLAND	BOW ISLAND	21.0	20	5	16.0	SUPPLIES LOCAL UTILITY, USED AS A STORAGE RESERVOIR BY CANADIAN WESTERN NATURAL GAS COMPANY LIMITED.
BOYLE-MUSTANG- AMISK LAKE	LOWER CRETACEOUS	7.0	25	5	5.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU	19.8	20	5	15.0	
BRAEBURN	CADOMIN	7.9	20	5	6.0	
	TRIASSIC	7.9	20	5	6.0	
	PERMO-PENN	49.5	15	5	40.0	
BRAEBURN WEST	PADDY	5.9	10	5	5.0	
	CADOTTE	3.7	15	5	3.0	
	CADOMIN	4.7	10	5	4.0	
	TRIASSIC	13.2	20	5	10.0	
	JURASSIC	3.9	15	10	3.0	
BROOKS NORTH- EAST	BOW ISLAND	6.2	15	5	5.0	POSSIBLE LOCAL SUPPLY
	SUNBURST	6.3(1) 5.7(11)	10.0	5	4.8	SUPPLIES LOCAL UTILITY (1) ORIGINAL (11) LESS 0.6 PRODUCED TO JUNE 30, 1956.
BROOKS-TILLEY	MILK RIVER	28.8(1) 25.8(11)	20.0	5	19.0	SUPPLIES LOCAL UTILITY, (1) ORIGINAL (11) LESS 3.0 BCF PRODUCED TO JUNE 30, 1956.
	SUNBURST	12.4	15	5	10.0	POSSIBLE LOCAL SUPPLY.
BURNT RIVER	PADDY	2.3	10	5	2.0	





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE(5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
BURNT RIVER (CONT'D) CALGARY	BLUESKY	9.4	10	5	8.0	
	WABAMUN (CROSSFIELD)	125.0	10	60(1)	45.0	(1) HAS A VERY HIGH ACID GAS CONTENT.
CAMPBELL-NORMAN	BASAL BLAIRMORE	61.2(1) 59.2(11)	15.0	20(11)	40.0	(1) ORIGINAL (11) LESS 2.0 BCF PRODUCED TO JUNE 30, 1956 (111) REQUIRES PROCESSING WITH SOME GAS GATHERING DIFF- ICULTIES.
CARBON	GLAUCONITIC SAND	37.0	10	10	30.0	
CASTOR	VIKING	22.3	15	5	18.0	Possible LOCAL SUPPLY
	UPPER BLAIRMORE	2.3	10	5	2.0	
CESSFORD	VIKING	98.8	20	5	75.0	
	BASAL COLORADO	1020.0	20	5	775.0	
	BASAL BLAIRMORE	272.4	15	5	220.0	
CHANCELLOR	VIKING	5.3	20	5	4.0	
	BASAL COLORADO	15.8	20	5	12.0	
	LOWER CRETACEOUS	15.2	10	5	13.0	
CHIGWELL	LOWER CRETACEOUS	19.6	15	10	15.0	
CHINOOK RIDGE	PADDY	6.9	20	10	5.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	CADOTTE	24.7	10	10	20.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NOTIKEWIN	24.7	10	10	20.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
CLIVE	VIKING	3.9	20	5	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	BLAIRMORE	3.7	15	5	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU GAS CAP	9.2	10	15	7.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
CLIVE (CONT'D)	LEDUC GAS CAP	4.7	15	25	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
COLD LAKE	BLAIRMORE	2.6(1) 1.7(11)	25	5	1.0	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.9 BCF PRODUCED TO JUNE 30, 1956.
COMREY	BOW ISLAND	55.7	15	5	45.0	
CONNORSVILLE	VIKING	8.7	15	5	7.0	
	BASAL BLAIRMORE	13.6	15	5	11.0	
CONTROL	VIKING	11.7	10	5	10.0	
	BASAL BLAIRMORE	12.4	15	5	10.0	
COUNTESS	BOW ISLAND	58.5	10	5	50.0	
	BASAL BLAIRMORE	5.3	20	5	4.0	
CROSSFIELD	MISSISSIPPIAN (ELKTON)	118.2	10	20	85.0	
DIXONVILLE	GETHING	31.6	10	5	27.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
DONALDA	VIKING	9.9	15	5	8.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	DETRITAL	2.5	15	5	2.0	
DUCHESS	BOW ISLAND	13.2	20	5	10.0	
	BASAL COLORADO	11.8	20	5	9.0	
DUHAMEL	VIKING	6.2	15	5	5.0	VIKING AND DEVONIAN SOLUTION GAS BEING INJECTED INTO D-3.
	BLAIRMORE	2.5	15	5	2.0	
	DEVONIAN SOLUTION	8.4(1) 7.5(11)	30(1)	20	4.0	(1) ORIGINAL (11) LESS 0.9 BCF PRODUCED TO JUNE 30, 1956.





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE(5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
DUVERNOY	VIKING	2.2(1) 1.5(11)	20(1)	5	1.0	SUPPLIES CHEMICAL PLANT, (1) ORIGINAL (11) LESS 0.7 BCF PRODUCED TO JUNE 30, 1956.
DYBERG	BELLY RIVER	3.5	10	5	3.0	
	VIKING	9.4	10	5	8.0	
	BASAL BLAIRMORE	3.7	15	5	3.0	
EAGLE HILL	MISSISSIPPIAN (ELKTON)	41.7	10	20	30.0	
EAGLESHAM	PEACE RIVER	1.3	20	5	1.0	
	GETHING	5.0	15	5	4.0	
	CADOMIN	4.7	10	5	4.0	
	MISSISSIPPIAN	8.2	10	5	7.0	
ELK POINT	BLAIRMORE	1.2(1) 0.9(11)	25(1)	5	0.6	SUPPLIES LOCAL UTILITY (1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
ERSKINE	VIKING	2.8	25	5	2.0	
	BLAIRMORE	19.6	15	10	15.0	
	LEDUC GAS CAP	30.6	10	20	22.0	
	LEDUC SOLUTION	18.5(1) 17.9(11)	35(1)	30	8.0	(11) ORIGINAL (111) LESS 0.6 BCF PRODUCED TO JUNE 30, 1956.
ETZIKOM	BOW ISLAND	154.8	15	5	125.0	
	BASAL BLAIRMORE	1.4	25	5	1.0	
EXCELSIOR	VIKING	9.2	20	5	7.0	POSSIBLY DEFERRED UNTIL OIL PRODUCED FROM DEVONIAN RESERVOIR.





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
EXCELSIOR (CONT'D) EYREMORE	BASAL BLAIRMORE	31.56	10	5	27.0	
	BOW ISLAND	22.6	30	5	15.0	(1) RESERVOIR LOSS HIGH BECAUSE OF LOW DELIVERABILITY.
FAIRYDELL-BON ACCORD	VIKING	120.9(1) 119.0(11)	20	5	90.0	(1) ORIGINAL (11) LESS 1.9 BCF PRODUCED TO JUNE 30, 1956.
	BASAL BLAIRMORE	10.5	20	5	8.0	
FENN-BIG VALLEY	VIKING	18.6	15	5	15.0	
	NISKU SOLUTION	179.0(1) 170.5(11)	35	35	70.0	(1) ORIGINAL (11) LESS 8.5 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC	11.4(1) 11.1(11)	30	35	5.0	(1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
FOREMOST	BOW ISLAND	34.9(1) 29.1(11)	20	5	21.0	(1) ORIGINAL (11) LESS 5.8 BCF PRODUCED TO JUNE 30, 1956.
FORT SASKATCHEWAN	VIKING	153.0(1) 141.6(11)	10	5	120.0	(1) ORIGINAL (11) LESS 11.4 BCF PRODUCED TO JUNE 30, 1956.
GARRINGTON	LEDUC	30.9	10	10	25.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
GEM	VIKING	10.5	20	5	8.0	
	BASAL COLORADO	1.4	25	5	1.0	
	BASAL BLAIRMORE	2.6	20	5	2.0	
GHOST PINE	BLAIRMORE	15.2	10	5	13.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	2.6	15	10	2.0	
GILBY	VIKING	4.2	20	10	3.0	
	BASAL BLAIRMORE	9.9	10	10	8.0	
	MISSISSIPPIAN (PEKISKO)	235.5	10	15	180.0	



TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
GILBY (CONT'D)	WABAMUN	7.0	10	20	5.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
GOLDEN SPIKE	VIKING	4.4(1) 3.0(11)	20	5	2.0	(1) ORIGINAL (11) LESS 1.4 BCF PRODUCED TO JUNE 30, 1956.
	BLAIRMORE	11.8(1) 11.3(11)	15	5	9.0	(1) ORIGINAL (11) LESS 0.5 BCF.
	WABAMUN	16.9(1) 15.8(11)	10	15	12.0	(1) ORIGINAL (11) LESS 1.1 BCF.
	NISKU GAS CAP	3.9	10	15	3.0	
	NISKU SOLUTION	18.0(1) 17.6(11)	35	20	9.0	(1) ORIGINAL (11) LESS 0.4 BCF.
	LEDUC SOLUTION	129.0(1) 132.4(11)	25	25	75.0	(1) ORIGINAL (11) 4.6 BCF PRODUCED TO JUNE 30, 1956 AND 8.0 BCF STORED TO JUNE 30, 1956. NET PRODUCTION -3.4 BCF.
GOODWIN LAKE	VIKING	5.3	20	5	4.0	ALL DEFERRED BY REINJECTION PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	JURASSIC (NORDEGG)	30.9	10	10	25.0	
GORDONDALE	CADOTTE	72.4	20	5	55.0	
	GETHING	12.4	15	5	10.0	
	CADOMIN	70.1	10	5	60.0	
GRASSY ISLAND LAKE	VIKING	28.1	25	5	20.0	PRODUCTION ECONOMICS QUESTIONABLE.
HACKETT	BASAL BLAIRMORE	52.6	10	5	45.0	
HAIRY HILL	VIKING	2.8	25	5	2.0	POSSIBLE LOCAL SUPPLY.
	BLAIRMORE	15.1(1) 14.6(11)	20	5	11.0	SUPPLIES CHEMICAL PLANT. (1) ORIGINAL (11) LESS 0.5 BCF PRODUCED TO JUNE 30, 1956.





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
HAMELIN CREEK	CADOTTE	6.6	20	5	5.0	
	GETHING	46.8	10	5	40.0	
HAMILTON LAKE	VIKING	56.1	25	5	40.0	
HANNA-WATTS	VIKING	5.0(1) 4.8(11)	20(1)	5	3.6	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.2 BCF PRODUCED TO JUNE 30, 1956.
	BLAIRMORE	5.4(1) 5.2(11)	15(1)	5	4.2	(1) ORIGINAL (11) LESS 0.2 BCF PRODUCED TO JUNE 30, 1956.
	MISSISSIPPIAN	3.3	20	5	2.5	
HARMATTAN-ELKTON	MISSISSIPPIAN (ELKTON)	27.8	10	20	20.0	
	NON-ASSOCIATED MISSISSIPPIAN GAS	320.0	10	20	950.0	
	GAS CAP					
	MISSISSIPPIAN	185.0(1) 184.9(11)	35(1)	25	90.0	(1) ORIGINAL (11) LESS 0.1 BCF PRODUCED TO JUNE 30, 1956.
	SOLUTION					
HERCULES	VIKING	11.2	15	5	9.0	
	BASAL BLAIRMORE	11.7	10	5	10.0	
HOMEGLLEN-RIMBEY	LEDUC GAS CAP	1117.2(1) 1113.0(11)	10	20	800.0	(1) ORIGINAL (11) LESS 4.2 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC SOLUTION	105.8(1) 103.8(11)	35	25	50.0	(1) ORIGINAL (11) LESS 2.0 BCF PRODUCED TO JUNE 30, 1956.
HUSSAR	BASAL COLORADO	21.0	25	25	15.0	
	GLAUCONITIC SAND	105.4	10	5	90.0	
JOARCAM	VIKING GAS CAP	65.8	20	5	50.0	DEFERRED UNTIL OIL RESERVOIR DEPLETED.





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
JUMPING POUND	RUNDLE	787.5(1) 728.3(11)	10	17	538.0	(1) ORIGINAL (11) LESS 59.2 BCF PRODUCED TO JUNE 30, 1956.
KATHRYN	WABAMUN (CROSSFIELD)	55.6	10	40(1)	30.0	HAS HIGH ACID CONTENT.
KESSLER	VIKING	70.2	25	5	50.0	
KEVISVILLE	LEDUC	27.8	10	60(1)	10.0	(1) HAS HIGH ACID CONTENT AND WET; WILL REQUIRE PROCESSING.
LAC LA BICHE	VIKING	45.1	30(1)	5	30.0	PRESENTLY BEYOND ECONOMIC REACH.
	McMURRAY	14.0	25(1)	5	10.0	(1) HIGH BECAUSE OF LOW RESERVOIR PRESSURE.
LEAHURST	BLAIRMORE	9.9(1) 9.6(11)	15	5	7.7	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
LEDUC-WOODBEND	VIKING	16.6(1) 16.0(11)	20	5	12.0	(1) ORIGINAL (11) LESS 0.6 BCF PRODUCED TO JUNE 30, 1956.
	BLAIRMORE	226.2(1) 224.4(11)	25	10	151.0	(1) ORIGINAL (11) LESS 1.8 BCF PRODUCED TO JUNE 30, 1956.
						14.0 BCF PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU GAS CAP	42.5	10	15	32.5	
	NISKU SOLUTION	151.7(1) 120.9(11)	25	30	58.0	(1) ORIGINAL (11) LESS 30.8 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC GAS CAP	521.0(1) 488.2(11)	15	15	348.0	(1) ORIGINAL (11) LESS 32.8 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC SOLUTION	221.0(1) 169.6(11)	40	30	56.8	(1) ORIGINAL (11) LESS 51.4 BCF PRODUCED TO JUNE 30, 1956.
						LOWER CRETACEOUS, NISKU AND LEDUC RESERVES ALL ADJUSTED BY 1.16 FACTOR TO CONVERT TO 1000 B.T.U. BASIS.



TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
LINDBERGH	VIKING	2.8	25	5	2.0	SUPPLIES SALT PLANT
	COLONY	4.4(1) 2.7(11)	25(1)	5	1.5	(1) ORIGINAL (11) LESS 1.7 BCF PRODUCED TO JUNE 30, 1956.
LITTLE SMOKY RIVER	PERMO-PENN	2.5	15	5	2.0	PRESENTLY BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	2.8	15	15	2.0	
	LEDUC SOLUTION AND GAS CAP	22.3(1) 22.1(11)	35(1)	30	10.0	(1) ORIGINAL (11) LESS 0.2 BCF PRODUCED TO JUNE 30, 1956.
LLOYDMINSTER	COLONY	7.9	40	15	4.0	SUPPLIES LOCAL UTILITY. A TOTAL OF 10.3 BCF HAS BEEN PRODUCED FROM BOTH ZONES TO JUNE 30, 1956.
	SPARKY	8.7	60	40	2.1	
MAJEAU LAKE	GLAUCONITIC SAND	2.6	20	5	2.0	PRESENTLY BEYOND ECONOMIC REACH.
	RUNDLE	12.3	10	10	10.0	
MALMO	VIKING	3.7	15	5	3.0	POSSIBLE LOCAL SUPPLY.
	BASAL BLAIRMORE GAS CAP	3.9	15	10	3.0	
	BASAL BLAIRMORE SOLUTION	4.2(1) 3.9(11)	40(1)	10	2.0	(1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
	NISKU GAS CAP	3.7	10	10	3.0	
	NISKU SOLUTION	7.5(1) 6.6(11)	35(1)	25	3.0	(1) ORIGINAL (11) LESS 0.9 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC GAS CAP	1.2	10	10	1.0	
	LEDUC SOLUTION	4.5(1) 4.1(11)	35(1)	20	2.0	(1) ORIGINAL (11) LESS 0.4 BCF PRODUCED TO JUNE 30, 1956.





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
MANYBERRIES	UPPER BOW ISLAND	7.9	20	5	6.0	
	LOWER BOW ISLAND	73.0	15	5	59.0	
MEDICINE HAT	MEDICINE HAT	1580.8(1) 1391.0(11)	20(1)	7.0	1000.0	(1) ORIGINAL (11) LESS 189.8 BCF PRODUCED TO JUNE 30, 1956.
	BOW ISLAND	19.7	20	5	15.0	
	ELLIS	19.7	20	5	15.0	
MINNEHIK-BUCK LAKE	MISSISSIPPIAN	61.7	10	10	50.0	
MORINVILLE	VIKING	2.8	25	5	2.0	
	BASAL BLAIRMORE	138.5(1) 125.9(11)	15(1)	5	100.0	(1) ORIGINAL (11) LESS 12.6 BCF PRODUCED TO JUNE 30, 1956.
MOUNTAIN PARK	TRIASSIC (SPRAY RIVER)	29.2	10	5	25.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
NEVIS	LOWER CRETACEOUS	39.5	20	5	30.0	
	DEVONIAN	666.7	10	20	480.0	
NEW NORWAY	VIKING	2.6	20	5	2.0	POSSIBLE SOURCE FOR LOCAL SUPPLY.
	BLAIRMORE	5.9	10	5	5.0	
	NISKU	6.9(1) 6.4(11)	35(1)	25	3.0	(1) ORIGINAL (11) LESS 0.5 BCF PRODUCED TO JUNE 30, 1956.
NORMANDVILLE	GETHING TRIASSIC	14.9 6.2	15 15	5 5	12.0 5.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	PERMO-PENN	3.5	10	5	3.0	
	RUNDLE	6.2	10	10	5.0	
OBED	RUNDLE	12.4	10	10	10.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
OBERLIN	VIKING	0.6	25	5	0.4	
	BASAL BLAIRMORE	1.8(1)	20(1)	5	0.7	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.7 BCF PRODUCED TO JUNE 30, 1956.
OKOTOKS	WABAMUN (CROSSFIELD)	375.0	10.0	60(1)	135.0	(1) HAS VERY HIGH ACID GAS CONTENT.
OLDS	WABAMUN (CROSSFIELD)	97.2	10	20	70.0	
OYEN	VIKING	10.5	20	5	8.0	
PARKLAND	RUNDLE	19.6	10	15	15.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
PEMBINA	BELLY RIVER	1.3	20	5	1.0	
	CARDIUM SOLUTION	2080.0(1)	42	41	700.0	(1) ORIGINAL (11) LESS 18.7 BCF PRODUCED TO JUNE 30, 1956.
	BASAL BLAIRMORE	1.4	25	5	1.0	
	RUNDLE	3.9	15	10	3.0	
PENDANT D'OREILLE	BOW ISLAND	234.1(1)	20	5	145.0	(1) ORIGINAL (11) LESS 34.4 BCF PRODUCED TO JUNE 30, 1956.
PHIL CAN	GETHING	11.8	20	5	9.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	MISSISSIPPIAN	5.0	15	5	4.0	
PIGEON LAKE	LEDUC	13.1	10	15	10.0	
PINCHER CREEK	RUNDLE	2858.0	16	25	1800.0	
POUCE COUPE	CADOTTE	251.0(1)	15	5	200.0	(1) ORIGINAL (11) LESS 2.9 BCF PRODUCED TO JUNE 30, 1956.
	CADOMIN	12.4	15	5	10.0	



TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
POUCE COUPE SOUTH	DOE CREEK	13.0	35	5	8.0	
	CADOTTE	101.8	10	5	87.0	
	CADOMIN	11.7	10	5	10.0	
	TRIASSIC (SCHOOLER CREEK)	12.4	15	5	10.0	
	BOW ISLAND	7.0	25	5	5.0	
PRINCESS	BASAL COLORADO	39.5	20	5	30.0	
	SUNBURST	117.0	10	5	100.0	
	RUNDLE GAS CAP	6.6	20	5	5.0	
	JEFFERSON GAS CAP	41.2	20	15	28.0	
	VIKING	658.0	20	5	500.0	
PROVOST	LOWER CRETACEOUS	13.1	20	5	10.0	
REDWATER	VIKING	14.0	25	5	10.0	0.4 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC SOLUTION	259.0(1) 228.5(11)	40	50	62.5	(1) ORIGINAL (11) LESS 30.5 BCF PRODUCED TO JUNE 30, 1956.
						RESERVES ADJUSTED BY 1.25 FACTOR TO CONVERT TO 1000 B.T.U. BASIS.
	VIKING	5.3	20	5	4.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	UPPER BLAIRMORE	3.9	20	5	3.0	
ROCHESTER	CLEARWATER	11.9	20	5	9.0	
	GLAUCONITIC	3.9	20	5	3.0	
	BASAL BLAIRMORE	5.0	15	5	4.0	
	WABAMUN	6.2	15	5	5.0	





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
ROLLING HILLS	BOW ISLAND	26.0	15	5	21.0	
	BASAL COLORADO	7.4	15	5	6.0	
ROSEBUD	VIKING	6.6	20	5	5.0	
	GLAUCONITIC SAND	12.4	15	5	10.0	
	BASAL BLAIRMORE	11.7	10	5	10.0	
ROSEDALE	VIKING	9.2	20	5	7.0	
	BASAL BLAIRMORE	15.2(1) 14.9(11)	15(1)	5	12.0	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
RYCROFT	GETHING NON-ASSOCIATED AND ASSOCIATED	16.6(1) 15.6(11)	15	5	12.4	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 1.0 BCF PRODUCED TO JUNE 30, 1956.
ST. ALBERT	VIKING	2.6	20	5	2.0	
	LOWER CRETACEOUS	56.0(1) 47.8(11)	10	5	40.0	(1) ORIGINAL (11) LESS 8.2 BCF PRODUCED TO JUNE 30, 1956.
ST. PAUL	BLAIRMORE	2.5(1) 1.3(11)	20	5	0.8	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 1.2 BCF PRODUCED TO JUNE 30, 1956.
SADDLE HILLS	PEACE RIVER	26.9	10	5	23.0	PRESENTLY BEYOND ECONOMIC REACH.
	LOWER CRETACEOUS	2.5	15	5	2.0	
SAMSON	BASAL BLAIRMORE ASSOCIATED AND NON- ASSOCIATED	14.0	10	5	12.0	





TABLE 1 - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
SARCEE	RUNDLE	208.3	10	20	150.0	
SAVANNA CREEK	RUNDLE	370.0	10	25	250.0	
SIBBALD	VIKING	39.5	20	5	30.0	
	BLAIRMORE	4.2	25	5	3.0	
SMITH COULEE	BOW ISLAND	11.1(1) 10.2(11)	25	5	7.0	(1) ORIGINAL (11) LESS 0.9 BCF PRODUCED TO JUNE 30, 1956.
STETTLER	NISKU SOLUTION	24.4(1) 23.2(11)	35	25	11.0	(1) ORIGINAL (11) LESS 1.2 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC SOLUTION	9.5(1) 9.0(11)	35	30	4.0	(1) ORIGINAL (11) LESS 0.5 BCF PRODUCED TO JUNE 30, 1956.
STURGEON LAKE	LEDUC SOLUTION	43.1(1) 42.8(11)	35	35	18.0	(1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
STURGEON LAKE SOUTH	GETHING	15.2	10	5	13.0	
	TRIASSIC NON- ASSOCIATED	4.2	25	5	3.0	
	TRIASSIC SOLUTION	16.4	35	25	8.0	
	LEDUC SOLUTION	250.0(1) 248.7(11)	35	35	105.0	(1) ORIGINAL (11) LESS 1.3 BCF PRODUCED TO JUNE 30, 1956.
STURGEON LAKE SOUTH GENERAL AREA	GETHING	52.0	15	5	42.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	TRIASSIC	21.1	10	5	18.0	
	PERMO-PENN	2.6	20	5	2.0	



TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE(5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
SUFFIELD	MILK RIVER	27.2(1) 25.5(11)	20	5	19.0	SUPPLIES LOCAL UTILITY. (1) ORIGINAL. (11) LESS 1.7 BCF PRODUCED TO JUNE 30, 1956.
SUNDRE	MISSISSIPPIAN GAS CAP (ELKTON)	22.1	20	15	15.0	DEFERRED UNTIL OIL RESERVES DEPLETED.
	MISSISSIPPIAN SOLUTION	62.2(1) 61.8(11)	35	25	30.0	(1) ORIGINAL (11) LESS 0.4 BCF PRODUCED TO JUNE 30, 1956.
SYLVAN LAKE	BASAL BLAIRMORE	39.8	10	5	34.0	
	MISSISSIPPIAN (PEKISKO)	7.4	10	10	6.0	
	DEVONIAN	5.6	10	20	4.0	
TANGENT	CADOTTE	15.0	30.0(1)	5	10.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH. (1) RESERVOIR PRESSURE VERY LOW.
	GETHING	111.5	15	5	90.0	
	TRIASSIC	92.2	20	5	70.0	
THREE HILLS CREEK BELLY RIVER		5.8	10	5	5.0	
	VIKING	6.6	20	5	5.0	
	MISSISSIPPIAN	30.9	10	10	25.0	
TURIN	Bow Island	5.0	15	5	4.0	
	BASAL BLAIRMORE	21.2	10	5	18.0	
	ELLIS	5.0	15	5	4.0	
	RUNDLE	2.9	15	20	2.0	
TURNER VALLEY	RUNDLE GAS CAP	-	-	20.0	205.0	AFTER DEDUCTING PRODUCTION TO JUNE 30, 1956.
	RUNDLE SOLUTION GAS	-	-	38.0	150.0	
VIKING-KINSELLA	VIKING	1068.0(1) 802.2(11)	20(1)	5	559.0	(1) ORIGINAL (11) LESS 265.8 BCF PRODUCED TO JUNE 30, 1956.





TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
VIKING-KINSELLA (CONT'D)	BLAIRMORE	19.8	15	5	16.0	
	DEVONIAN	5.3	20	5	4.0	
WARBURG	BELLY RIVER	3.5	10	5	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	VIKING	10.5	10	5	9.0	
WAYNE	VIKING	13.2	20	5	10.0	
	BASAL BLAIRMORE ASSOCIATED	13.6	10	10	11.0	DEFERRED UNTIL OIL RESERVES DEPLETED.
WEST DRUMHELLER	BASAL BLAIRMORE	3.5	10	5	3.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.
	NISKU GAS CAP	9.2	10	15	7.0	
WESTEROSE	NISKU SOLUTION	30.2(1) 28.3(11)	45(1)	25	11.0	(1) ORIGINAL (11) LESS 1.9 BCF PRODUCED TO JUNE 30, 1956.
	LEDUC SOLUTION	2.2	40	25	1.0	
	LEDUC GAS CAP	125.0	10	20	90.0	DEFERRED UNTIL OIL IS DEPLETED.
	LEDUC SOLUTION GAS	118.5(1) 115.5(11)	30(1)	25	60.0	(1) ORIGINAL (11) LESS 3.0 NET PRODUCTION TO JUNE 30, 1956. DEFERRED BY REINJECTION.
WESTEROSE SOUTH	LEDUC NON-ASSOCIATED	588.0	10	15	450.0	DEFERRED BY REINJECTION.
WESTLOCK	VIKING	264.2(1) 263.5(11)	20(1)	5	200.0	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.7 BCF PRODUCED TO JUNE 30, 1956.
	BLAIRMORE	2.6	20	5	2.0	
WEST PRAIRIE	CADOTTE	17.5	20	5	15.0	PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.



TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS
WEST PRAIRIE (CONT'D) WESTWARD HO	GETHING	5.8	10	5	5.0	
	MISSISSIPPIAN (ELKTON)	39.2	10	15	30.0	
	NON-ASSOCIATED MISSISSIPPIAN (ELKTON) SOLUTION	27.1(1) 26.8(11)	35(1)	25	13.0	(1) ORIGINAL (11) LESS 0.3 BCF PRODUCED TO JUNE 30, 1956.
WHITELAW	GETHING	75.1(1) 74.3(11)	15	5	60.0	SUPPLIES LOCAL UTILITY. (1) ORIGINAL (11) LESS 0.8 BCF PRODUCED TO JUNE 30, 1956.
	TRIASSIC (SPRAY RIVER) LOWER CRETACEOUS	61.9 13.5(1) 7.4(11)	15 20	5	50.0 4.5	(1) ORIGINAL (11) LESS 6.1 BCF PRODUCED TO JUNE 30, 1956.
WILDUNN CREEK	VIKING	19.7	20	5	15.0	
WIMBORNE	VIKING	1.4	25	5	1.0	
	NISKU GAS CAP	2.9	20	15	2.0	
	LEDUC GAS CAP	120.5	10	40(1)	65.0	(1) HAS HIGH ACID GAS CONTENT.
WINDFALL	VIKING	7.4	25	10	5.0	
	RUNDLE	1.5	25	10	1.0	
	LEDUC NON-ASSOCIATED	1025.0	10	35	600.0	
WIZARD LAKE	VIKING	2.5	15	5	2.0	
	LOWER CRETACEOUS	9.9	15	5	8.0	
	LEDUC SOLUTION	249.0(1) 240.0(11)	40(1)	30	98.5	(1) ORIGINAL (11) LESS 8.6 BCF PRODUCED TO JUNE 30, 1956.
						RESERVES ADJUSTED BY 1.23 FACTOR TO CONVERT TO 1000 B.T.U. BASIS.

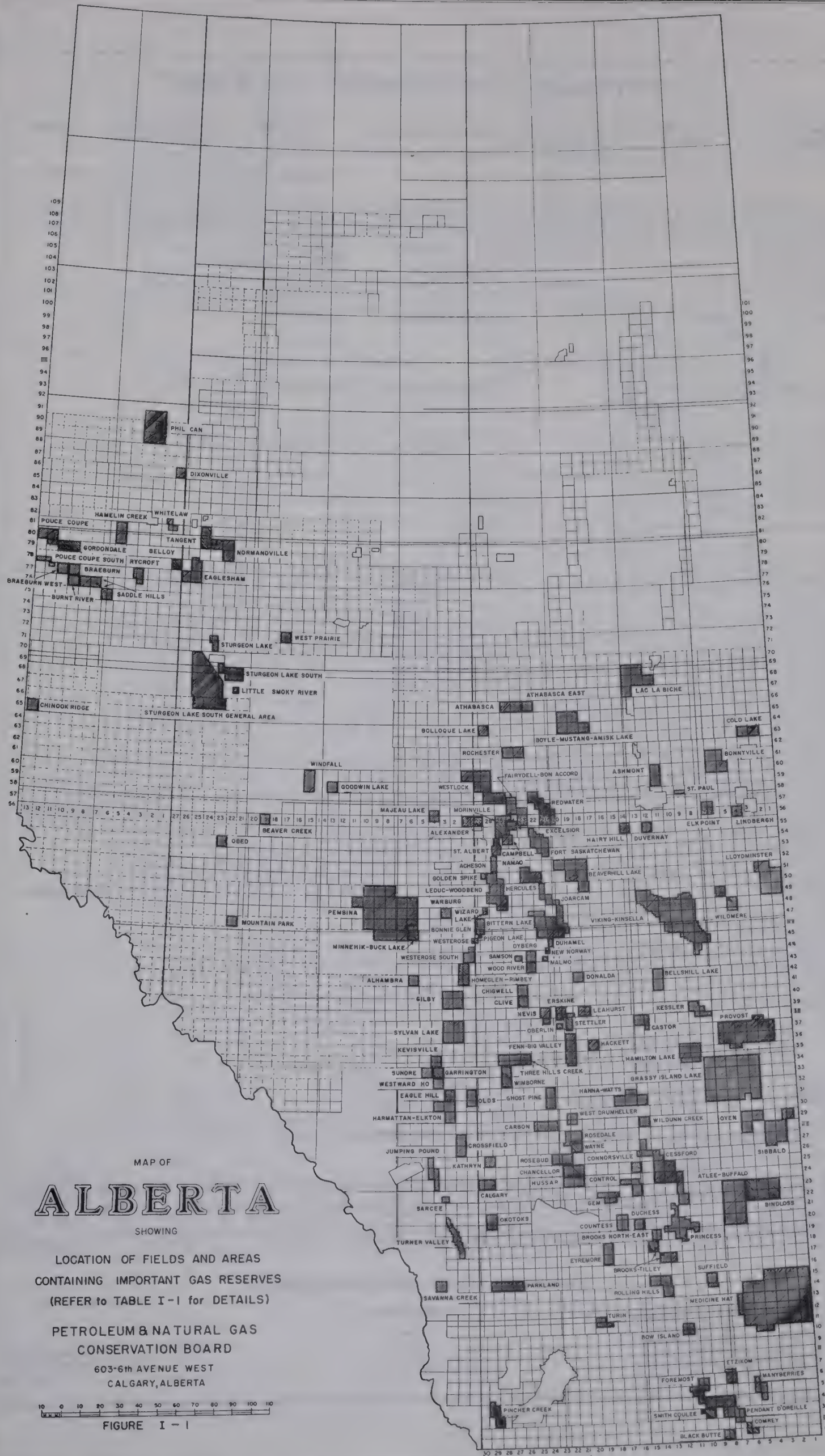




TABLE I - 1 (CONTINUED)

1	2	3	4	5	6	7	
FIELD	ZONE (5)	ESTIMATED ORIGINAL GAS IN PLACE BILLIONS OF CUBIC FEET	DISCOUNT FOR RESERVOIR LOSS PER CENT	DISCOUNT FOR SURFACE LOSS, ETC., (4) PER CENT	DISPOSABLE GAS (3) BILLIONS OF CUBIC FEET	REMARKS	
WOOD RIVER	BASAL BLAIRMORE	17.5	10	5	15.0		
OTHER RESERVES LESS THAN 10 BILLION CUBIC FEET NOT LISTED ABOVE							
OTHER RESERVES LESS THAN 10 BILLION CUBIC FEET NOT LISTED ABOVE							
					197.0	ESTIMATED TO BE WITHIN ECONOMIC REACH. PRESENTLY CONSIDERED BEYOND ECONOMIC REACH.	
					420.0		
TOTAL					18,328.1		
GENERAL NOTES: 1. UNLESS OTHERWISE NOTED RESERVOIR LOSS IS CALCULATED AS 10% OF ORIGINAL GAS IN PLACE EXCEPT IN PARTICULAR CASES WHERE THE FOLLOWING LOSSES PERTAIN: SAND THICKNESS 10-15 FEET. RESERVOIR LOSS 15%, SAND THICKNESS 5-10 FEET. RESERVOIR LOSS 20%, SAND THICKNESS 0-5 FEET. RESERVOIR LOSS 25%.							
2. SURFACE LOSS IS TAKEN AS 5% FOR ALL DRY GAS, AND VARIES FOR WET GAS DEPENDING UPON ITS COMPOSITION.							
3. DISPOSABLE RESERVES AS AT SEPTEMBER 30TH, 1956, WITH PRODUCTION DEDUCTED TO JUNE 30TH, 1956 ONLY.							
4. UNLESS OTHERWISE NOTED SURFACE DISCOUNT FACTORS IN EXCESS OF 5% ARE DUE TO EXTRACTION OF HEAVY HYDROCARBONS.							
5. REFER TO THE TABLE OF FORMATIONS SHOWN IN FIGURE 1 - 2 FOR THE STRATIGRAPHIC RELATIONSHIP OF THE ZONES.							

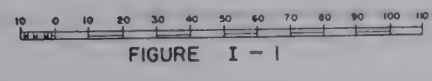




MAP OF  
**ALBERTA**  
SHOWING

LOCATION OF FIELDS AND AREAS  
CONTAINING IMPORTANT GAS RESERVES  
(REFER TO TABLE I-1 FOR DETAILS)

PETROLEUM & NATURAL GAS  
CONSERVATION BOARD  
603-6th AVENUE WEST  
CALGARY, ALBERTA









## TABLE OF FORMATIONS—ALBERTA

ERA	PERIOD	SOUTH-CENTRAL MTNS. & FOOTHILLS	SOUTHERN PLAINS	CENTRAL PLAINS	NORTH-CENTRAL MTNS. & FOOTHILLS	NORTHWEST PLAINS	NORTHEAST PLAINS
CENOZOIC	QUATERNARY	RIVER GRAVEL AND SAND, SOIL GLACIAL DEPOSITS—MORAINES, DRIFT, LAKE FILL, ESKERS, KAMES REWORKED OLIGOCENE CONGLOMERATES					
	TERTIARY	PORCUPINE HILLS—PASKAPOO WILLOW CREEK	PASKAPOO WILLOW CR.	CYPRESS HILLS RAVEN'S-CRAG PASKAPOO	PASKAPOO	PASKAPOO	
MESOZOIC	UPPER CRETACEOUS	ST. MARY RIVER BEARPAW BELLY RIVER HIGHWOOD SS. CARDIUM JUMPING POUND SS. FISH SCALE ZONE	ST. MARY RIVER BEARPAW OLDMAN FOREMOST MILK RIVER FIRST WHITE SPECKLED SHALE MEDICINE HAT SS. CARDIUM SECOND WHITE SPECKLED SHALE FISH SCALE ZONE "BARONS" SS. BOW ISLAND BSL COLD	EDMONTON BELLY RIVER LEA PARK FIRST WHITE SPECKLED SHALE CARDIUM SECOND WHITE SPECKLED SHALE FISH SCALE ZONE VIKING COLONY SPARKY ISLAY DINA	BRAZEAU WAPIABI BIGHORN BLACKSTONE MOUNTAIN PARK LUSCAR CADOMIN UPPER NIKANASSIN	WAPITI CHINOOK FIRST WHITE SPECKLED SHALE BADHEART CARDIUM SECOND WHITE SPECKLED SHALE DUNVEGAN SHAFTSBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	BELLY RIVER FIRST WHITE SPECKLED SHALE LA BICHE SECOND WHITE SPECKLED SHALE FISH SCALE ZONE PELICAN JOLI FOU GRAND RAPIDS CLEAR-WATER WABISKAW MCMURRAY
		WAPIABI BLACKSTONE	COLORADO BLAIRMORE	COLORADO BLAIRMORE MANNVILLE	SMOKY RIVER GROUP WAPIABI KASKAPOO DUNVEGAN	SMOKY RIVER GROUP WAPIABI KASKAPOO DUNVEGAN	LA BICHE
		CROWSNEST	BLAIRMORE	BLAIRMORE	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	LA BICHE
		BLAIRMORE	BLAIRMORE	BLAIRMORE	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	LA BICHE
		BLAIRMORE	BLAIRMORE	BLAIRMORE	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	LA BICHE
	LOWER CRETACEOUS	BLAIRMORE	BLAIRMORE	BLAIRMORE	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	LA BICHE
		BLAIRMORE	BLAIRMORE	BLAIRMORE	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	FORT ST. JOHN GROUP SHAFESBURY PEACE RIVER SPIRIT RIVER BLUESKY GETHING CADOMIN	LA BICHE
	JURASSIC	FERNIE GROUP "PASSAGE BEDS" "GREEN BEDS" "GREY BEDS" ROCK CREEK "POKER CHIP" (BLACK) SHALE NORDEGG	ELLIS GROUP SWIFT RIERDON SAWTOOTH PIPER	FERNIE GROUP L. NIK. B. & B. R. C. BL. SH. NORDEGG	FERNIE GROUP LOWER NIKANASSIN "GREY BEDS" ROCK CREEK "BLACK SHALE" NORDEGG	FERNIE GROUP LOWER NIKANASSIN "GREY BEDS" ROCK CREEK "BLACK SHALE" NORDEGG	FERNIE GROUP LOWER NIKANASSIN "GREY BEDS" ROCK CREEK "BLACK SHALE" NORDEGG
	TRIASSIC	SPRAY RIVER WHITEHORSE SULPHUR MTN.	SPRAY RIVER WHITEHORSE SULPHUR MTN.	SPRAY RIVER WHITEHORSE SULPHUR MTN.	SCHOOLER CREEK SPRAY RIVER WHITEHORSE SULPHUR MTN.	SCHOOLER CREEK SPRAY RIVER WHITEHORSE SULPHUR MTN.	SCHOOLER CREEK SPRAY RIVER WHITEHORSE SULPHUR MTN.
PALEOZOIC	PERMIAN and/or PENNSYLVANIAN*	ROCKY MTN. STORM CR. NORQUAY	ROCKY MTN. STORM CR. NORQUAY	ROCKY MOUNTAIN	ROCKY MOUNTAIN	PERMO/PENNSYLVANIAN*	PERMO/PENNSYLVANIAN*
	MISSISSIPPIAN	TUNNEL MTN. MOUNT HEAD "UPPER POROUS" "MIDDLE DENSE" "LOWER POROUS" SHUNDA (BLACK LIME) PEKISKO	TURNER VALLEY ELKTON SHUNDA PEKISKO	RUNDLE SHUNDA PEKISKO	RUNDLE GROUP STODDART DEBOLT SHUNDA PEKISKO	RUNDLE GROUP STODDART DEBOLT SHUNDA PEKISKO	RUNDLE GROUP STODDART DEBOLT SHUNDA PEKISKO
		BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW
		BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW	BANFF EXSHAW
	DEVONIAN	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP SOUTHESK (WHITE REEF) CAIRN (BLACK REEF)	WAB. CROSSFIELD STETTNER SILTSTONE AND EVAPORITE UNIT WINTERBURN NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	WABAMUN BIG VALLEY STETTNER GRAMINIA CALMAR NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME
		PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP SOUTHESK (WHITE REEF) CAIRN (BLACK REEF)	WAB. CROSSFIELD STETTNER SILTSTONE AND EVAPORITE UNIT WINTERBURN NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	WABAMUN BIG VALLEY STETTNER GRAMINIA CALMAR NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME
		PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP SOUTHESK (WHITE REEF) CAIRN (BLACK REEF)	WAB. CROSSFIELD STETTNER SILTSTONE AND EVAPORITE UNIT WINTERBURN NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	WABAMUN BIG VALLEY STETTNER GRAMINIA CALMAR NISKU WOODBEND IRETON LEUC DUNVEGAN MAJEAU LK. BEAVERHILL LAKE	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME	PALLISER COSTIGAN MORROW ALEXO FAIRHOLME GROUP UPPER MT. HAWK LOWER MT. HAWK SOUTHESK (WHITE REEF) PERDRIX FLUME
	SILURIAN	GHOSH RIVER* (CAMBRIAN AGE?)	ELK POINT GROUP*	ELK POINT GROUP	GHOSH RIVER* (CAMBRIAN AGE?)	GHOSH RIVER* (CAMBRIAN AGE?)	GHOSH RIVER* (CAMBRIAN AGE?)
	ORDOVICIAN	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"
	CAMBRIAN	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"	CAMBRIAN & "GRANITE WASH"
	PRE-CAMBRIAN	PRE-CAMBRIAN	PRE-CAMBRIAN	PRE-CAMBRIAN ("BASEMENT COMPLEX")	PRE-CAMBRIAN	PRE-CAMBRIAN	PRE-CAMBRIAN

## THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

CALGARY, ALBERTA

15 JAN, 1957

## FIGURE I-2

## — LEGEND —

GAS.....  
OIL.....  
COAL.....  
CORRELATION UNCERTAIN.....  
AGE NOT CONCLUSIVELY ESTABLISHED.....  
FACIES TRANSITION.....

## — NOTE —

No official Board endorsement is intended for the nomenclature employed by this chart.  
Unit durations, thicknesses and areal effects have not been graded to a uniform scale.  
Northward, northeastward or eastward variations are depicted from left to right within each column.  
Pie Crustaceous nomenclature and correlations in part after H. Frebold (Can. O. & G. Indus., Feb. 35), H. B. Peach (A. A. P. G. proposed nomenclature, June 36 Bull.), J. Lee (A. A. P. G. Bull. Oct. 35) and H. B. Peach, D. G. McLaren (A. S. P. Guide Book, 36).



II. THE TRENDS IN EXPLORATION AND GROWTH OF THE  
RESERVES OF NATURAL GAS IN THE PROVINCE OF  
ALBERTA

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In previous reports prepared by the Board studies of the trends in exploration and the growth of reserves have been presented. The studies were based upon data submitted at various hearings before the Board and upon an analysis of statistics compiled by the Board's own staff. While no new submissions have been received since the November, 1955 report, the Board's statistics have been reviewed and brought up-to-date.

In a submission made to The Royal Commission on Canada's Economic Prospects, in October, 1955, the Board staff estimated that there existed within the Alberta portion of the Western Canada Sedimentary Basin a maximum area of 213,500 square miles of land favorable for the prospecting of crude petroleum and natural gas. This figure included all of the area covered by sediments to a depth in excess of 1,000 feet but did not include the mountain ranges. The volume of sediment occurring between the base of the glacial drift and the top of the precambrian granite over the available acreage of sediments underlying the plains area of Alberta has been calculated to be approximately 225,000 cubic miles. By assigning a uniform thickness of 20,000 feet to the entire foothills belt (presently considered to represent the economic depth limited for future exploration in the foothills) an additional 45,000 cubic miles of effective basin sediments have been calculated to exist in Alberta. The







area used in the Board's submission agrees closely with the 200,000 square mile estimate contained in the Board's November, 1953 report. For the purpose of this report the area of potential gas lands in the Province is still considered to be 200,000 square miles.

The density of wildcat drilling has increased steadily from one wildcat well per 121 square miles (of the 200,000 square miles of potential gas area) as at December 31, 1951 to one wildcat well per 57 square miles as at September 30, 1956. The Board considers that this density will increase to one wildcat well per 10 square miles before the increase in the cumulative initial disposable gas reserves per wildcat well becomes negligible. This would give a total of some 20,000 wildcat wells for the 200,000 square miles of potential gas area.

Statistical data dealing with the number of wildcat wells drilled, and the initial disposable gas reserves discovered to September 30, 1956, are presented in Table II-1. This is a revision of similar tables in previous reports. These data show that at September 30, 1956, the drilling of 3,496 wildcat wells had resulted in the discovery of some 19.4 trillion cubic feet of initial disposable gas reserves. This is an overall discovery rate of 5.6 billion cubic feet of gas for every wildcat well drilled. The corresponding rates established in June, 1953, and June, 1955 were 5.3 and 5.4 billion cubic feet of gas per wildcat well, respectively.



In Figure II-1 is shown a plot of the growth of the cumulative initial disposable reserves of natural gas, by years, using the data listed in Table II-1. Also shown, are the corresponding curves published in the reports of March, 1952, November, 1953, and November, 1955. The curves confirm the Board's conclusion indicated in previous reports; that a time lag of several years occurs before new discoveries may be fully evaluated. The graph indicates that reserves discovered previous to 1953 have been almost completely evaluated, while those subsequent to that time likely will be assigned higher values when re-evaluated in the future. The dip in the curve for the data tabulated in Table II-1 below that plotted from corresponding data published in the November, 1955 report for the years 1948 to 1952 inclusive, is caused by some corrections having been made in the dates of discovery of certain pools and a downward revision in reserve estimates of some pools discovered in that time interval.

Figure II-2 is a revision of a plot similar to that contained in the November, 1955 report. It shows the initial disposable reserves per wildcat well drilled from 1941 to 1956 inclusive. The dashed line A-A indicates the ratio of the initial disposable reserves discovered per year to the number of wildcat wells drilled per year. It is quite erratic due to its sensitivity to discoveries of larger reserves. From this curve it may be seen that an average of approximately 4.3 billion





cubic feet of new gas reserves have been obtained per wildcat well drilled in the last five years. The line B-B is the ratio of the cumulative initial disposable reserves discovered to the cumulative number of wildcat wells drilled. This curve shows that at September 30, 1956, due to the drilling of 3,496 wildcat wells which resulted in the discovery of some 19.4 trillion cubic feet of initial disposable gas reserves, the cumulative rate of discovery was 5.6 billion cubic feet for each wildcat well drilled (compared with the rate of 5.3 billion cubic feet per wildcat well established in June, 1953 and 5.4 billion cubic feet per wildcat well established in June, 1955). It can be seen from the curve that, due to the time lag effect, the 1953 and 1955 values have increased to 6.8 and 5.9 billion cubic feet per wildcat drilled. The Board still believes the figure of 6 billion cubic feet to be a realistic interpretation of the reserves which may be developed per wildcat well drilled at the present time.

Figure II-3, as in the previous report, illustrates the trend in growth of cumulative initial disposable gas reserves with the cumulative number of wildcat wells drilled. The line DEF (which was first constructed as a conservative forecast on Figure B-4 of the November, 1953 report) is an estimate of the growth trend of initial disposable gas reserves which may be anticipated to the drilling of a total of 20,000 wildcat wells.



It still is considered to be a conservative projection. The change in slope of the curve indicates an expected diminishing of the rate of growth of initial disposable reserves of natural gas per wildcat well drilled in future years from the present expectation of 6 billion cubic feet per wildcat well.

Of general interest, is a projection contained in the Board's submission to The Royal Commission on Canada's Economic Prospects based upon:

- a) The accumulation of crude oil reserves in the United States in relation to the volume of sediments in that country (40,000 barrels of oil per cubic mile of sediment)
- b) The volume of available sediments in Alberta, (270,000 cubic miles), and
- c) The 1955 ratio of established initial disposable gas reserves to the initial recoverable crude oil reserves.

Assuming that the same degree of oil accumulation will be found in Alberta as has occurred in the United States, and assuming that the ratio of gas reserves to oil reserves in Alberta will remain constant, an ultimate total reserve of recoverable natural gas in the order of 75 trillion cubic feet may be forecast. The Board considers this geological approach to be indicative of the ultimate possibilities.

A trend in the distribution of gas reserves by types has become evident in the past few years. By classifying each reserve listed in Table II-1 into four types of gas, the percentage distribution among types as of 1950 and as of 1956 is





as follows:

<u>Types of Reserve</u>	<u>Percentage of Total Reserves</u>	
	<u>1950</u>	<u>1956</u>
Non-Associated "Dry" Gas	58	46
Condensate Gas	27	22
Associated Gas	9	20
Solution Gas	6	12

It may be seen that the percentage of dry gas reserves has declined from 58 in 1950 to 46 in 1956. Geographically, the dry gas reserves generally are located in sands of the Upper and Lower Cretaceous Periods underlying the plains area of Alberta. With the apparent shifting in exploration from the plains area to the foothills and mountain areas of the Province, it is expected that more "wet" gas reserves will be discovered and that the percentage of gas requiring processing for removal of liquid hydrocarbons will increase beyond the current 54 per cent of total reserves.



TABLE 11 - 1

## THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

## TRENDS IN WILDCAT DRILLING AND GROWTH OF DISPOSABLE GAS RESERVES IN THE PROVINCE OF ALBERTA

1	2	3	4	5	6	7	8
YEAR	WILDCAT WELLS PER YEAR	WILDCAT WELLS CUMULATIVE	NAME OF FIELD	DISPOSABLE GAS RESERVES AS OF SEPT. 30, 1956 BCF	SALES TO JUNE 30, 1956 BCF	DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF	CUMULATIVE INITIAL DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF
PRIOR TO 1930		172	MEDICINE HAT, Bow Island, Brooks, Tilley, VIKING-KINSELLA (VIKING), TURNER VALLEY, FOREMOST, POUCE COUPE, WAINWRIGHT	2196	842	3038	3038
1930	29	201	PIN HORN	3		3	3038
1931	9	210					3038
1932	6	216					3041
1933	7	223					3041
1934	3	226	LLOYDMINSTER	6	6	12	3053
1935	2	228					3053
1936	8	236					3053
1937	15	251	WILDMERE	4	6	10	3063
1938	12	263					3063
1939	18	281					3063
1940	23	304					3063
1941	20	324	PRINCESS SUFFIELD	158	-	158	3221
1942	43	367	OYEN	19	2	21	3242
			OTHER SMALL FIELDS	8	-	8	3250
1943	34	401	ATHABASCA	4	-	4	3254
1944	56	457	BLACK BUTTE	3	1	4	3258
			JUMPING POUND	32	7	39	3297
1945	56	513	PATRICIA	538	49	587	3884
			OTHER SMALL FIELDS	10	-	10	
1946	54	567	BEAVERHILL LAKE (VIKING)	4	-	4	3898
			BROOKS NORTH-EAST (SUNBURST)	48	-	48	
			LINDBERGH	5	1	6	
			PENDANT D'OREILLE	3	2	5	
			PROVOST	145	33	178	
1947	71	638	FAIRYDELL-BON ACCORD	510	-	510	4645
			HANNA-WATTS (BLAIRMORE AND MISSISSIPPIAN)	98	2	100	
			LEDUC-WOODBEND	7	-	7	
			MANYBERRIES	658	40	698	
			MEDICINE HAT (Bow Island and Ellis)	65	-	65	
			ST. PAUL	30	-	30	
			SMITH COULEE	1	1	2	
			OTHER SMALL FIELDS	7	1	8	
				1	-	1	5556





TABLE II - 1 (CONTINUED)

1	2	3	4	5	6	7	8
YEAR	WILDCAT WELLS PER YEAR	WILDCAT WELLS CUMULATIVE	NAME OF FIELD	DISPOSABLE GAS RESERVES AS OF SEPT. 30, 1956 BCF	SALES TO JUNE 30, 1956 BCF	DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF	CUMULATIVE INITIAL DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF
1948	126	764	BROOKS NORTH-EAST (Bow Island)	5	-	5	
			ELK POINT	1	-	1	
			MORINVILLE	102	12	114	
			PINCHER CREEK	1800	-	1800	
			REDWATER	72	-	72	
			OTHER SMALL FIELDS	7	-	7	
1949	209	973	ASHMONT	10	-	10	7555
			BONNYVILLE	3	1	4	
			BOLLOQUE LAKE	12	-	12	
			BOYLE-MUSTANG-AMISK LAKE	20	-	20	
			CAMPBELL-NAMAO	40	-	40	
			CASTOR	20	-	20	
			CESSFORD	1070	-	1070	
			EXCELSIOR	34	-	34	
			GOLDEN SPIKE	110	-	110	
			HANNA-WATTS (VIKING)	4	-	4	
			JOARCAM	50	-	50	
			LAC LA BICHE	40	-	40	
			NORMANDVILLE (GETHING)	12	-	12	
			OVERLIN	1	1	2	
			ROCHESTER	28	-	28	
			STETTLE	15	-	15	
			WESTLOCK (VIKING)	200	-	201	
			OTHER SMALL FIELDS	44	1	44	
1950	224	1197	ACHESON	93	2	95	9271
			ATHABASCA EAST	1	-	1	
			COUNTESS	54	-	54	
			DUHAMEL	11	-	11	
			FENN-BIG VALLEY	90	-	90	
			LEAHURST	8	-	8	
			ROLLING HILLS (Bow Island)	21	-	21	
			SIBBALD	33	-	33	
			TURIN (RUNDLE)	2	-	2	
			WHITELAW	110	1	111	
			OTHER SMALL FIELDS	56	-	56	
1951	456	1653	ATLEE-BUFFALO (VIKING)	70	-	70	9753
			BELLO (MISSISSIPPIAN)	15	-	15	
			BONNIE GLEN	652	9	661	



TABLE II - 1 (CONTINUED)

1	2	3	4	5	6	7	8
YEAR	WILDCAT WELLS PER YEAR	WILDCAT WELLS CUMULATIVE	NAME OF FIELD	DISPOSABLE GAS RESERVES AS OF SEPT. 30, 1956 BCF	SALES TO JUNE 30, 1956 BCF	DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF	CUMULATIVE INITIAL DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF
1951 (Cont.)							
			CLIVE	16	-	16	
			DUCHESS	19	-	19	
			ETZIKOM (Bow Island)	125	-	125	
			FORT SASKATCHEWAN	120	11	131	
			HAMELIN CREEK	45	-	45	
			HARMATTAN-ELKTON (Non-Associated)	20	-	20	
			HERCULES	19	-	19	
			MAJEAU LAKE	12	-	12	
			NEW NORWAY	10	-	10	
			OKOTOKS	135	-	135	
			ST. ALBERT	42	8	50	
			TANGENT	170	-	170	
			TURIN (Bow Island, Basal Blairmore and Ellis)	26	-	26	
			VIKING-KINSELLA (Blairmore and Devonian)	20	-	20	
			WESTLOCK (Blairmore)	2	-	2	
			WIMBORNE (Nisku Gas Cap)	2	-	2	
			WIZARD LAKE	108	2	110	
			OTHER SMALL FIELDS	84	-	84	
		2112	BELLOY (Cadotte and Gething)	53	-	53	
			BINDLOSS (Viking)	180	-	180	
			BITTERN LAKE	26	-	26	
			CHANCELLOR (Lower Cretaceous)	13	-	13	
			CHIGWELL	15	-	15	
			COLD LAKE	1	1	2	
			COMREY	45	-	45	
			DIXONVILLE	27	-	27	
			DUVERNAY	1	1	2	
			EAGLESHAM (Peace River and Mississippian)	8	-	8	
			ERSKINE	47	-	47	
			GHOST PINE	15	-	15	
			GORDONDALE (Cadotte)	55	-	55	
			HACKETT	45	-	45	
			HAIKY HILL	13	1	14	
			HAMILTON LAKE	40	-	40	
			MALMO	17	-	17	
			MINNEHIK-BUCK LAKE	50	-	50	
			NEVIS	510	-	510	
			OLDS	70	-	70	
			PHIL CAN	13	-	13	
			PIGEON LAKE	10	-	10	
1952	459						11495





TABLE II - 1 (CONTINUED)

1	2	3	4	5	6	7	8
YEAR	WILDCAT WELLS PER YEAR	WILDCAT WELLS CUMULATIVE	NAME OF FIELD	DISPOSABLE GAS RESERVES AS OF SEPT. 30, 1956 BCF	SALES TO JUNE 30, 1956 BCF	DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF	CUMULATIVE INITIAL DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF
1952 (Cont.)							
			RYCROFT	12	1	19	
			STURGEON LAKE	18	-	18	
			STURGEON LAKE SOUTH GENERAL AREA	62	-	62	
			WEST DRUMHELLER	22	-	22	
			WESTEROSE	150	-	150	
			WILDUNN CREEK	15	-	15	
			OTHER SMALL FIELDS	73	-	73	
			ATLEE-BUFFALO (BASAL BLAIRMORE)	70	-	70	
			DONALDA	10	-	10	
			DYBERG	14	-	14	
			EYREMORE	15	-	15	
			GILBY	196	-	196	
			GORDONDALE (GETHING AND CADOTTE)	70	-	70	
			HARMATTAN-ELKTON (MISSISSIPPIAN GAS CAP)	950	-	950	
			HOMEGLEN-RIMBEY	850	-	850	
			KESSLER	50	-	50	
			LITTLE SMOKY RIVER	14	-	14	
			PARKLAND	15	-	15	
			PEMBINA	705	-	705	
			POUCE COUPE SOUTH	115	-	115	
			ROSEDALE	19	-	19	
			SAMSON	12	-	12	
			STURGEON LAKE SOUTH	129	-	129	
			SYLVAN LAKE	44	-	44	
			THREE HILLS CREEK	35	-	35	
			WESTEROSE SOUTH	450	-	450	
			WOOD RIVER	15	-	15	
			OTHER SMALL FIELDS	99	-	99	
			ALEXANDER	30	-	30	
			ALHAMBRA	10	-	10	
			BELLSHILL LAKE	42	-	42	
			BINDLOSS (BASAL BLAIRMORE)	20	-	20	
			BRAEBURN	52	-	52	
			GARRINGTON	25	-	25	
			GEM	11	-	11	
			GRASSY ISLAND LAKE	20	-	20	
			HARMATTAN-ELKTON (MISSISSIPPIAN SOLUTION)	90	-	90	
			KATHRYN	30	-	30	
			SADDLE HILLS	25	-	25	
1953	411	2523					13105
1954	363	2886					16982

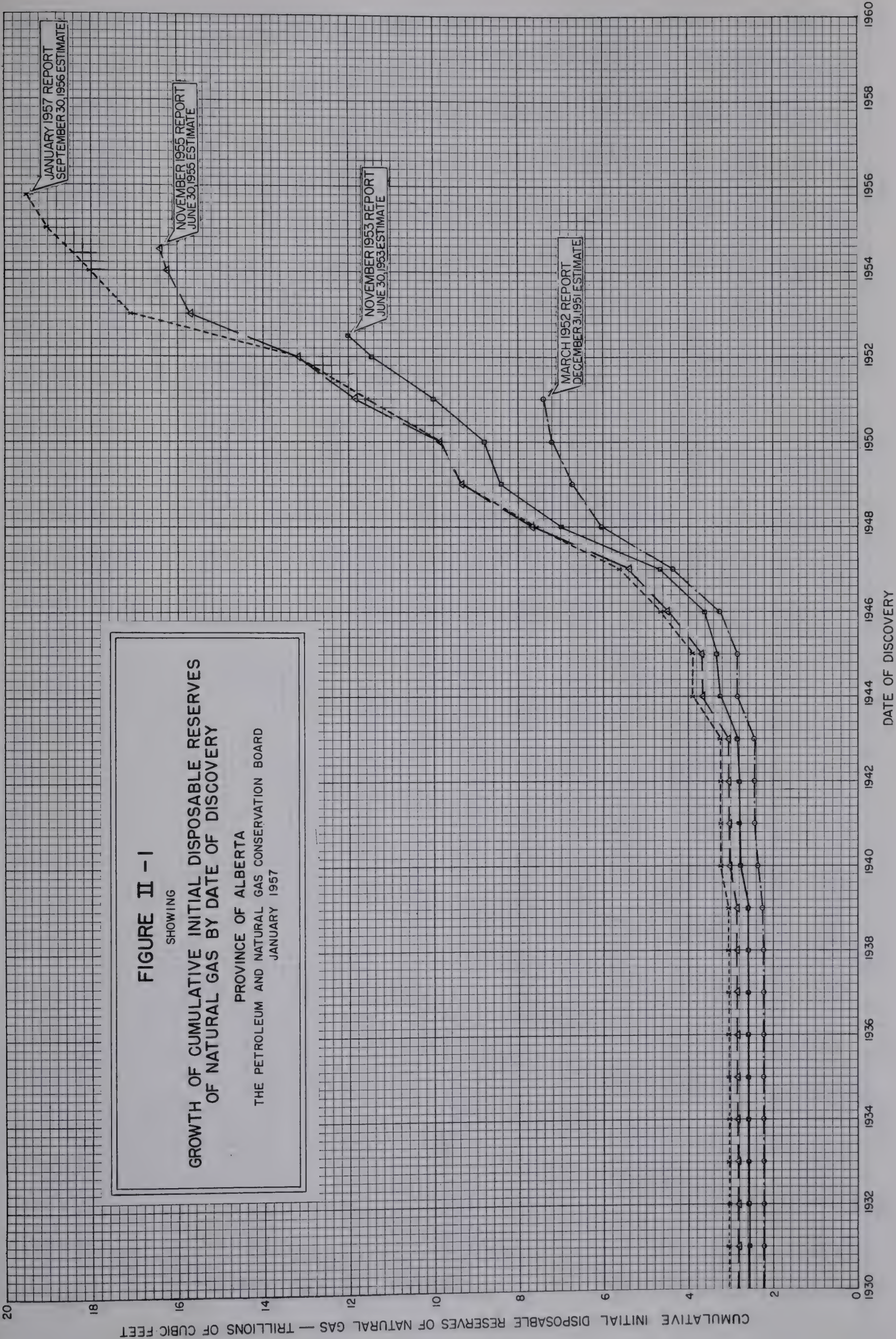


TABLE II - 1 (CONTINUED)

1	2	3	4	5	6	7	8
YEAR	WILDCAT WELLS PER YEAR	WILDCAT WELLS CUMULATIVE	NAME OF FIELD	DISPOSABLE GAS RESERVES AS OF SEPT. 30, 1956 BCF	SALES TO JUNE 30, 1956 BCF	DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF	CUMULATIVE INITIAL DISPOSABLE GAS RESERVES AT DATE OF DISCOVERY BCF
1954 (CONT.)							
			SARCEE	150	-	150	
			SAVANNA CREEK	250	-	250	
			WAYNE	21	-	21	
			WESTWARD HO (RUNDLE NON-ASSOCIATED)	30	-	30	
			WIMBORNE (VIKING AND LEDUC)	66	-	66	
			OTHER SMALL FIELDS	44	-	44	
1955	342	3228	BURNT RIVER	10	-	10	17898
			CALGARY	45	-	45	
			CARBON	30	-	30	
			CHANCELLOR (VIKING AND BASAL COLORADO)	16	-	16	
			CONTROL	20	-	20	
			ETZIKOM (BASAL BLAIRMORE)	1	-	1	
			HUSSAR	105	-	105	
			ROLLING HILLS (BASAL COLORADO)	6	-	6	
			ROSEBUD	25	-	25	
			SUNDRE	45	-	45	
			WESTWARD HO (RUNDLE SOLUTION)	13	-	13	
			WINDFALL	606	-	606	
1956	268	3496	OTHER SMALL FIELDS	89	-	89	18909
			BEAVER CREEK	20	-	20	
			BEAVERHILL LAKE (BLAIRMORE)	2	-	2	
			BELLOY (NOTEKWIN)	7	-	7	
			BRAEBURN WEST	25	-	25	
			CHINOOK RIDGE	45	-	45	
			CONNORSVILLE	18	-	18	
			CROSSFIELD	85	-	85	
			EAGLE HILL	30	-	30	
			EAGLESHAM (GETHING AND CADOMIN)	8	-	8	
			GOODWIN LAKE	29	-	29	
			KEVISVILLE	10	-	10	
			MOUNTAIN PARK	25	-	25	
			NORMANDVILLE (TRIASSIC, PERMO-PENN, RUNDLE)	13	-	13	
			OBED	10	-	10	
			WARBURG	12	-	12	
			WEST PRAIRIE	20	-	20	
			OTHER SMALL FIELDS	105	-	105	19373

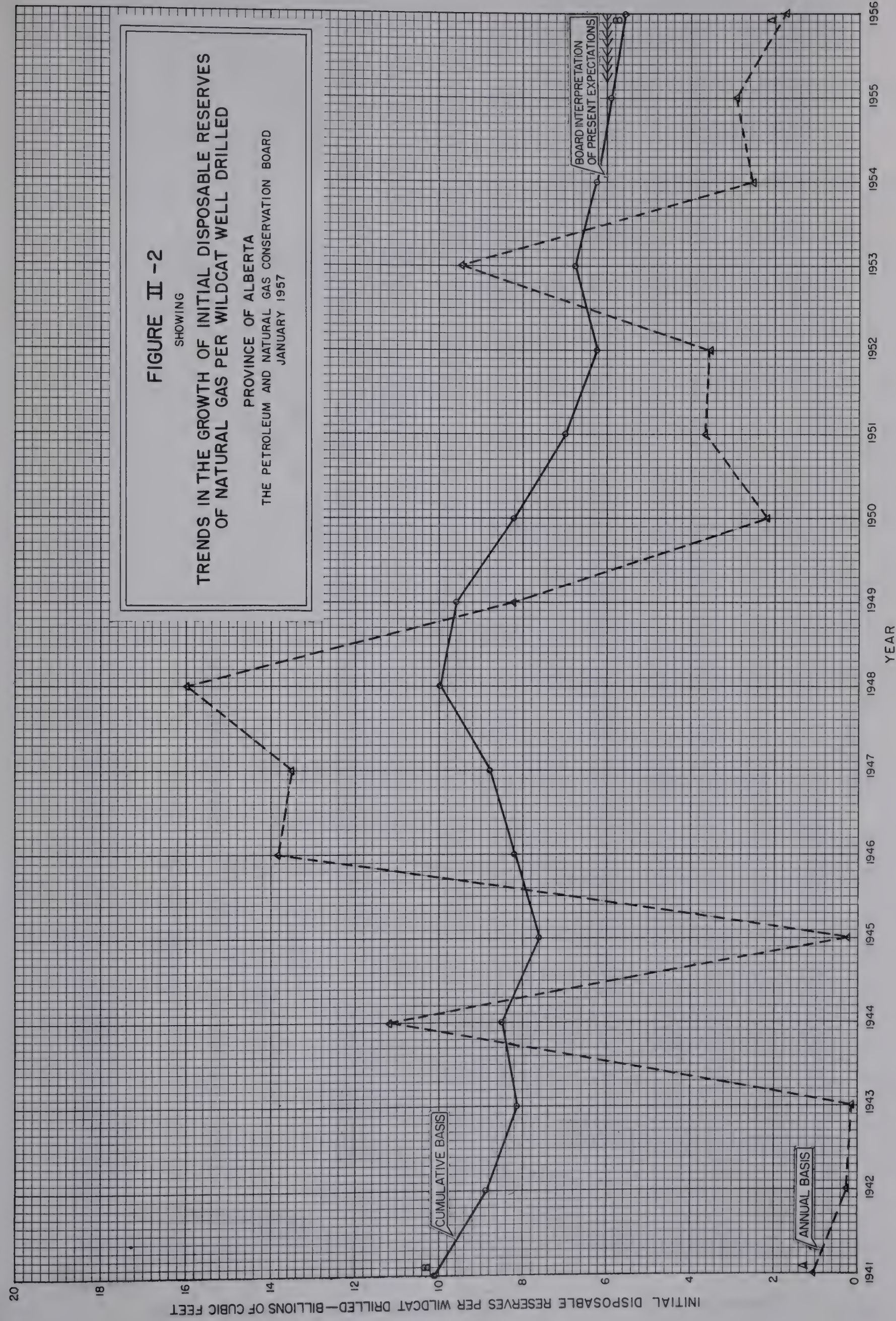






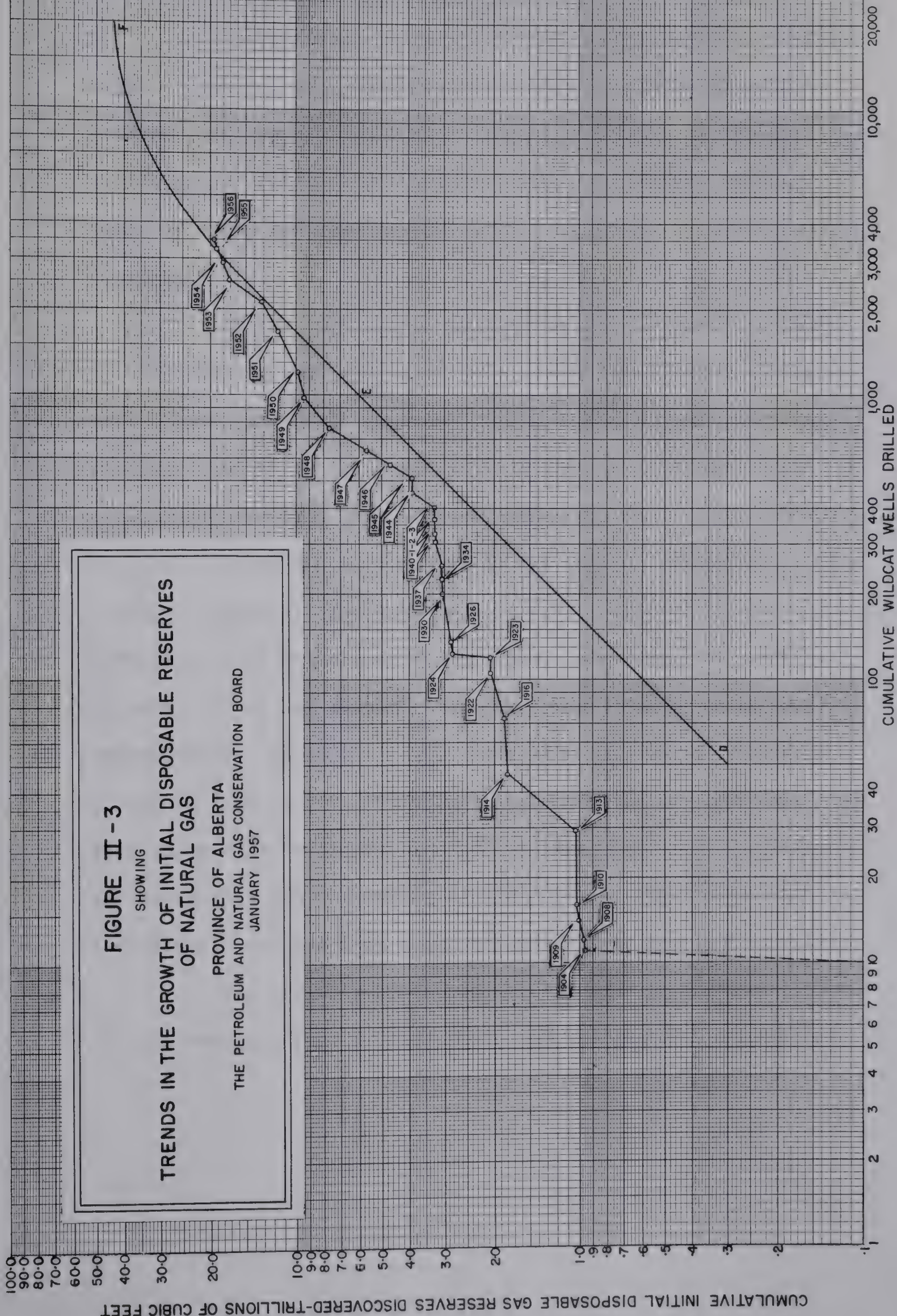
















### III. PRESENT AND FUTURE REQUIREMENTS OF NATURAL GAS OF THE PROVINCE

In reviewing its 1955 estimates of Alberta's requirements of natural gas, the Board has again given consideration both to population growth and to annual per capita rates of consumption. Full account has been taken of new information obtained since the last report.

#### Population

In the light of additional information and knowledge of population growth made available by the 1956 Dominion Government Census, the Board believes that its 1955 estimate of population growth over the 30 year period 1952 to 1981 can remain unchanged. The 1956 census records the provincial population at 1,123,116 persons as compared to the Board's estimate of 1,120,000 persons. The distribution of population, however, has been revised to reflect an even greater concentration in urban centres. It is now assumed that the urban population will be approximately 65% of the total population by 1961 (as compared to 60% in 1960 in the 1955 report) and that all of the urban population will be served with gas by about 1961. It is further estimated that the proportion of the total provincial population served will increase from about 65% in 1961 to about 75% in 1986.

The growth periods and the mid-year population estimate for the terminal year of each period of the Board's estimate of





population is indicated below.

<u>Period</u>	<u>Average Annual Rate Of Increase</u>	<u>Terminal Year Population</u>
1952 - 1961	3.4%	1,310,000
1962 - 1971	2.3%	1,643,000
1972 - 1981	1.6%	1,932,000

The population growth curves for Canada, Alberta, Edmonton and Calgary appear in Figure III-1. The population curve shown for Canada is based on the Gordon Royal Commission Report on the Economic Prospects of Canada.

#### Domestic and Commercial Requirements

After considering additional experience data and information supplied by the Canadian Western Natural Gas Company Limited, Northwestern Utilities Limited and other utility companies, the Board has adjusted the Provincial domestic and commercial per capita rates. These rates are now estimated to increase from the actual figure of 26 Mcf in 1955 to 30 Mcf in 1960, to 35 in 1966 for domestic and from the actual figure of 17 Mcf in 1955 to 22 in 1960, to 25 in 1966 for commercial.

The Board has made an upward extrapolation in the per capita figures only for a ten year period in the belief that per capita consumption may tend to level out within that time. The per capita figures are assumed to be constant from 1967 onward.



The present population projection and the adjusted per capita consumption rates are both reflected in increases in estimated requirements. The total domestic and commercial requirements for the period 1957 to 1986 are estimated at 1680 billion cubic feet and 1200 billion cubic feet respectively. These figures compare with 1467 billion cubic feet and 1035 billion cubic feet previously estimated for the period 1955 to 1984.

#### Industrial Requirements

Industrial requirements again have been considered under four main categories embracing:

- (1) Use of dry or lean natural gas as a fuel for industrial processes, steam generation, power plants, etc.;
- (2) Use of dry or lean natural gas, primarily for its methane content, for the manufacturers of carbon black, ammonia and a relatively few other products which may be produced economically using methane as a raw material;
- (3) Use of ethane recovered from residue gas for conversion to ethylene and other products; and
- (4) Use of LPG (propane and/or butane) for conversion by partial oxidation or other processes to a wide range of chemicals; use of butane for conversion to butadiene, use of isobutane for the manufacture of alkylate - important constituent of aviation gasoline, etc.





The Board, in its previous reports, stated that it anticipated a rapid increase in the industrial demand for natural gas. Since the 1955 report, the Board has had the opportunity to examine additional information concerning the use of natural gas by petrochemical plants, power plants and other industrial plants. In addition, information has been received regarding new expansion programs for existing plants and plans for establishing new industries within the Province. A re-assessment of presently available information leads the Board to believe that considerable expansion in the industrial demand for natural gas can be expected.

The best yardstick for forecasting these industrial requirements, is, in the Board's opinion, by per capita consumption rates related to past trends but adjusted to take into consideration current information together with an allowance for future expansion. The Board has reviewed the per capita rates used in previous reports, and, in view of further information obtained has made an upward revision. It is assumed that the per capita industrial rate will continue to rise over the next ten years but will level off about 1966 at a rate of 100 Mcf.

Fuel requirements of gas processing plants in fields such as Acheson, Bonnie Glen, Jumping Pound, Leduc-Woodbend, Pincher Creek and Turner Valley have not been included in the market estimates since allowance for these requirements has been made in the gas reserve estimates.



Revised Estimates

Investigation of the actual natural gas consumption figure for 1955 and the preliminary figure for 1956 reveals that actual consumption exceeded the 1955 estimates in both cases. The actual consumption in 1955 was in excess of the estimate by 6.5 billion cubic feet and the preliminary figure for 1956 was in excess of the estimate by about four billion cubic feet. A comparison of the actual consumption for 1955 and the preliminary total consumption for 1956 with the previous estimates exclusive of field use, processing plant use, storage and exclusive of propane and butane, is provided below:

	1955 Actual (1) <u>Bcf</u>	1955 Estimate <u>Bcf</u>	1956 Actual (1, 2) <u>Bcf</u>	1956 Estimate <u>Bcf</u>
Domestic	27.9	25.9	29.0	28.0
Commercial	18.7	18.4	20.0	19.9
Industrial	<u>48.6</u>	<u>44.4</u>	<u>57.0</u>	<u>54.0</u>
Total	<u>95.2</u>	<u>88.7</u>	<u>106.0</u>	<u>101.9</u>

(1) Converted to a normal degree day basis.

(2) Figures are preliminary and subject to minor change.

The excess of actual consumption over estimates for both years was due in part to the fact that the population served with gas for certain areas of the Province increased at a faster rate than was anticipated and in part to the fact that certain large industrial consumers realized early expansion in their plants.





Figure III-2 contains the revised per capita trends in domestic, commercial and industrial requirements. The total annual requirements under each of these categories is obtained by combining the per capita rate with the provincial population projection of Figure III-1. These total requirements are shown in Figure III-3 and in Table III-1. Figure III-4 gives a comparison of the present estimates with the Board's 1955 estimates.

The Board now estimates the total requirements of the Province for the 30 year period 1957-86 to be about 7610 billion cubic feet. A comparison with the 1955 report is provided below:

	Report November 1, 1955 (Period 1955 - 1984) <u>Billion Cubic Feet</u>	Revised Period 1957 - 1986 <u>Billion Cubic Feet</u>
Domestic	1,466.7	1,678.1
Commercial	1,034.9	1,199.0
Industrial	<u>3,537.7</u>	<u>4,732.0</u>
Total	<u>6,039.3</u>	<u>7,609.1</u>
	say 6,040	7,610

These requirements are allocated to the areas tributary to the Canadian Western Natural Gas Company Limited system, the Northwestern Utilities Limited system, the Medicine Hat-Redcliff area, the Peace River area and the remainder of the Province as shown in Table III-2. This table contains the estimated peak day requirements and the load factors for the five areas. The present allocation of requirements represent the Board's best judgement in



the matter and is based on the past proportion of each category in the various areas in relation to the total provincial requirements adjusted to take into account any foreseen changes.

The estimated requirements of the area tributary to the Northwestern Utilities Limited system have been increased by 747 Bcf over the estimate of the 1955 report and now amount to approximately 3816 Bcf. The total for the area tributary to the Canadian Western system has been increased by 414 Bcf. These requirements are now estimated at 2102 Bcf. The remaining provincial requirements have been allocated to the Medicine Hat-Redcliff area, the Peace River area and the remainder of the Province. The total estimated requirements for this group have been increased by 409 Bcf and now total 1692 Bcf.

The requirements of the existing permits for the export of gas from the Province are as follows:

<u>Permittee</u>	<u>Maximum Daily MMCFD</u>	<u>Maximum Annual BCF</u>	<u>Total</u>	
			<u>Authorized Withdrawal BCF</u>	<u>Withdrawn To June 30, 1956 BCF</u>
Peace River Transmission Company Limited	6	0.6	13	2.9
Peace River Transmission Company Limited	7	1.0	20	-
Westcoast Transmission Company Limited and Westcoast Transmission Company (Alberta) Limited	190	56	1080	-
Canadian Montana Pipeline Company	100	20	- *	51.1
Trans Canada Pipe Lines Limited	<u>620</u>	<u>183</u>	<u>4350</u>	-
Total	923	260.6	5757	





\*All the gas from Black Butte, Comrey, Manyberries, Pendant d'Oreille and Smith Coulee fields. Reserves in these fields are presently estimated at 294 billion cubic feet.

When related to initial disposable reserves which have been developed, the total number of wildcat wells drilled to date indicates an average discovery rate of approximately six billion cubic feet of gas for each wildcat drilled. Over the past five years some 300 to 500 wildcat wells have been drilled each year. Assuming that on the average 400 wildcat wells will be drilled each year for the next 30 years, it can be expected that some 15,000 wildcat wells would be drilled by 1986. Assuming that the present discovery rate will remain near six billion for each wildcat drilled for the next few years and then decline to about 2.8 billion cubic feet, a conservative estimate of initial disposable reserves of about 42 trillion cubic feet can be expected by 1986. The past reserves, related to both annual and total natural gas consumption for past years with a projection for the next 30 years is shown in Figure III-5.

The projected initial disposable reserves, shown in Figure III-5 as curve (1), when reduced by the overall past and future requirements, curve (2), leave remaining



disposable reserves, curve (3), in the order of 28 trillion cubic feet by 1986. The significance of the reserve estimates is indicated by the ratio of the year-end remaining disposable reserves to the annual requirements at any point of time. The ratio, called the life-index, curve (4), has declined from a high value of 219 in 1953 to 173 in 1956, but it is expected to decline rapidly due to the effect of export requirements to about 60 in 1963 and remain fairly constant until 1980 by which time the existing export permits expire. The life-index rises thereafter to a value of 85 in 1986.

As a matter of interest, the life-index for the whole of the United States has been approximately 25 in recent years, and for the year 1956 was 22.5.





## THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

## ESTIMATE OF NATURAL GAS REQUIREMENTS

PROVINCE OF ALBERTA, JANUARY 1, 1957 - DECEMBER 31, 1986

1		2	3	4	5
YEAR		DOMESTIC BILLIONS OF CUBIC FEET	COMMERCIAL BILLIONS OF CUBIC FEET	INDUSTRIAL BILLIONS OF CUBIC FEET	TOTAL BILLIONS OF CUBIC FEET
1957	V	31.3	22.1	73.1	126.5
1958		33.6	24.0	81.5	139.1
1959		35.9	26.0	92.9	154.8
1960		38.2	28.0	101.9	168.1
1961		41.9	29.5	109.4	180.8
1962		43.6	30.8	121.3	195.7
1963		45.2	32.2	128.2	205.6
1964		47.7	34.4	135.4	217.5
1965		49.5	35.2	142.2	226.9
1966		51.4	36.7	146.9	235.0
1967		52.6	37.6	150.2	240.4
1968		53.8	38.4	153.6	245.8
1969		55.0	39.3	157.1	251.4
1970		56.2	40.2	160.6	257.0
1971		57.5	41.1	164.3	262.9
1972		58.5	41.8	167.1	267.4
1973		59.5	42.5	169.9	271.9
1974		60.4	43.2	172.7	276.3
1975		61.5	43.9	175.7	281.1
1976		62.5	44.7	178.7	285.9
1977		63.6	45.4	181.6	290.6
1978		64.6	46.1	184.5	295.2
1979		65.6	46.9	187.5	300.0
1980		66.7	47.6	190.5	304.8
1981		67.6	48.3	193.2	309.1
1982		68.7	49.1	196.2	314.0
1983		69.7	49.8	199.2	318.7
1984		70.8	50.6	202.3	323.7
1985		71.9	51.4	205.5	328.8
1986		73.1	52.2	208.8	334.1
TOTALS		1678.1	1199.0	4732.0	7609.1
SAY		1680.0	1200.0	4730.0	7610.0



TABLE III - 2

THE PETROLEUM AND NATURAL GAS CONSERVATION BOARD

ESTIMATE OF NATURAL GAS REQUIREMENTS

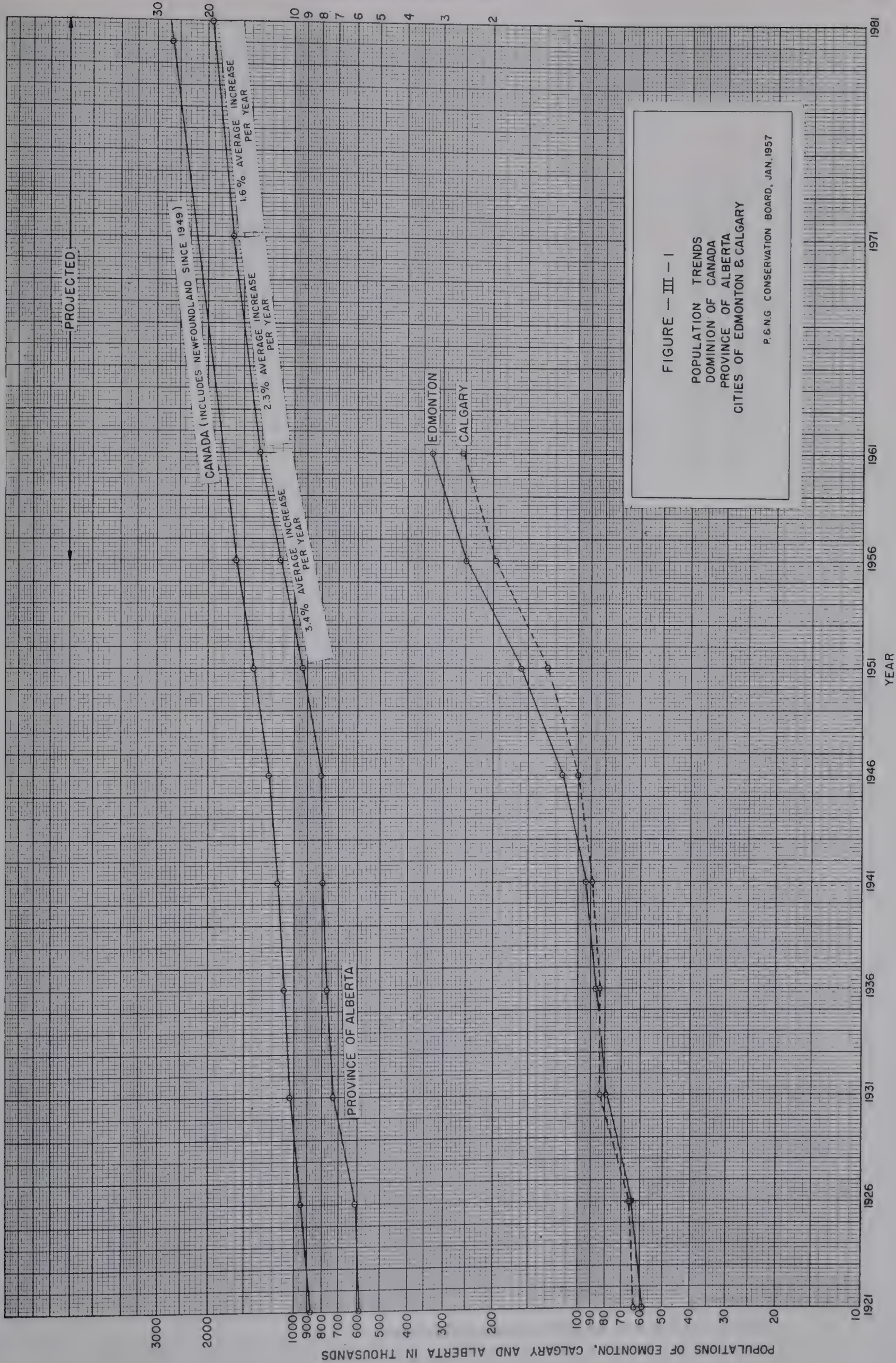
PROVINCE OF ALBERTA, JANUARY 1, 1957 - DECEMBER 31, 1986

ALLOCATION BETWEEN AREAS TRIBUTARY TO THE DISTRIBUTING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
AREA TRIBUTARY TO C.W.N.G. SYSTEM				AREA TRIBUTARY TO N.U.L. SYSTEM				PEACE RIVER AREA				MEDICINE HAT - REDCLIFF AREA			REMAINDER OF THE PROVINCE			TOTAL PROVINCIAL REQUIREMENTS	
YEAR	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	ANNUAL BILLIONS OF CUBIC FEET	PEAK DAY MMCF	LOAD FACTOR PER CENT	
1957	35.9	240	41	63.5	370	47	1.9	13	40	12.7	51	68	12.5	86	40	126.5	760	45.6	
1958	39.3	263	41	69.8	398	48	2.4	16	40	13.2	52	69	14.4	99	40	139.1	828	46.0	
1959	43.3	289	41	77.7	434	49	2.7	18	40	13.7	54	70	17.4	119	40	154.8	914	46.4	
1960	46.9	312	41	84.4	461	50	3.3	23	40	14.0	55	70	19.5	133	40	168.1	984	46.7	
1961	50.5	329	42	90.6	487	51	3.8	25	41	14.5	57	70	21.4	147	40	180.8	1045	47.3	
1962	54.2	354	42	98.1	527	51	4.0	27	41	14.9	58	70	24.5	168	40	195.7	1134	47.3	
1963	56.7	370	42	103.0	553	51	4.3	29	41	15.3	60	70	26.3	180	40	205.6	1192	47.3	
1964	60.0	390	42	109.1	584	51	4.7	31	41	15.7	61	70	28.0	191	40	217.5	1257	47.3	
1965	62.5	408	42	113.8	611	51	5.1	34	41	16.2	63	70	29.3	201	40	226.9	1317	47.3	
1966	64.7	412	43	117.9	633	51	5.5	36	42	16.6	65	70	30.3	208	40	235.0	1354	47.6	
1967	66.3	422	43	120.5	647	51	6.0	39	42	16.9	66	70	30.7	210	40	240.4	1384	47.6	
1968	67.8	431	43	123.2	660	51	6.4	42	42	17.4	68	70	31.0	212	40	245.8	1413	47.6	
1969	69.4	442	43	126.0	677	51	6.9	45	42	17.8	70	70	31.3	214	40	251.4	1448	47.6	
1970	70.8	451	43	128.8	692	51	7.5	49	42	18.2	71	70	31.7	217	40	257.0	1480	47.6	
1971	72.5	451	44	131.8	694	52	7.8	50	43	18.6	73	70	32.2	221	40	262.9	1489	48.4	
1972	73.7	458	44	134.1	705	52	8.1	51	43	19.1	75	70	32.4	221	40	267.4	1510	48.4	
1973	75.0	467	44	136.4	719	52	8.5	54	43	19.4	76	70	32.6	223	40	271.9	1539	48.4	
1974	76.2	474	44	138.6	730	52	8.8	56	43	20.0	78	70	32.7	224	40	276.3	1562	48.4	
1975	77.5	483	44	140.9	742	52	9.1	58	43	20.5	80	70	33.1	227	40	281.1	1590	48.4	
1976	78.8	478	45	143.4	754	52	9.5	59	44	20.8	81	70	33.4	228	40	285.9	1600	48.8	
1977	80.1	488	45	145.7	768	52	9.8	61	44	21.4	84	70	33.6	230	40	290.6	1631	48.8	
1978	81.3	495	45	148.1	780	52	10.2	64	44	21.7	85	70	33.9	232	40	295.2	1656	48.8	
1979	82.8	504	45	150.4	792	52	10.6	66	44	22.1	86	70	34.1	234	40	300.0	1682	48.8	
1980	84.0	510	45	152.8	803	52	10.9	68	44	22.7	89	70	34.4	235	40	304.8	1705	48.8	
1981	85.2	519	45	155.0	817	52	11.2	68	45	23.1	90	70	34.6	237	40	309.1	1731	49.0	
1982	86.6	527	45	157.4	829	52	11.5	70	45	23.6	92	70	34.9	239	40	314.0	1757	49.0	
1983	87.8	534	45	159.8	842	52	11.9	72	45	24.0	94	70	35.2	241	40	318.7	1783	49.0	
1984	89.2	542	45	162.3	853	52	12.3	75	45	24.5	96	70	35.4	242	40	323.7	1808	49.0	
1985	90.6	551	45	164.9	869	52	12.7	77	45	25.1	98	70	35.5	243	40	328.8	1838	49.0	
1986	92.1	561	45	167.5	883	52	13.2	80	45	25.6	100	70	35.7	245	40	334.1	1869	49.0	

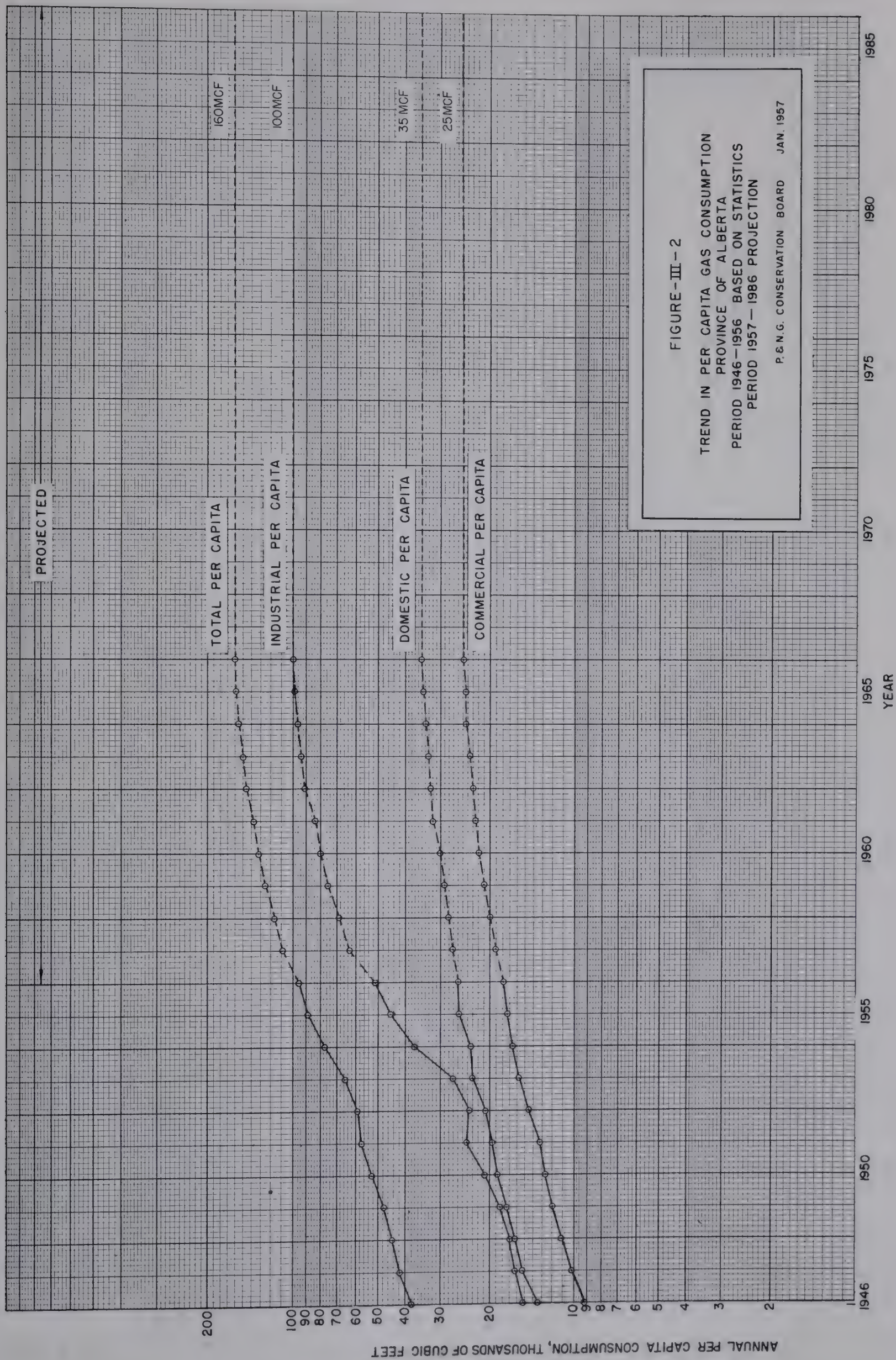






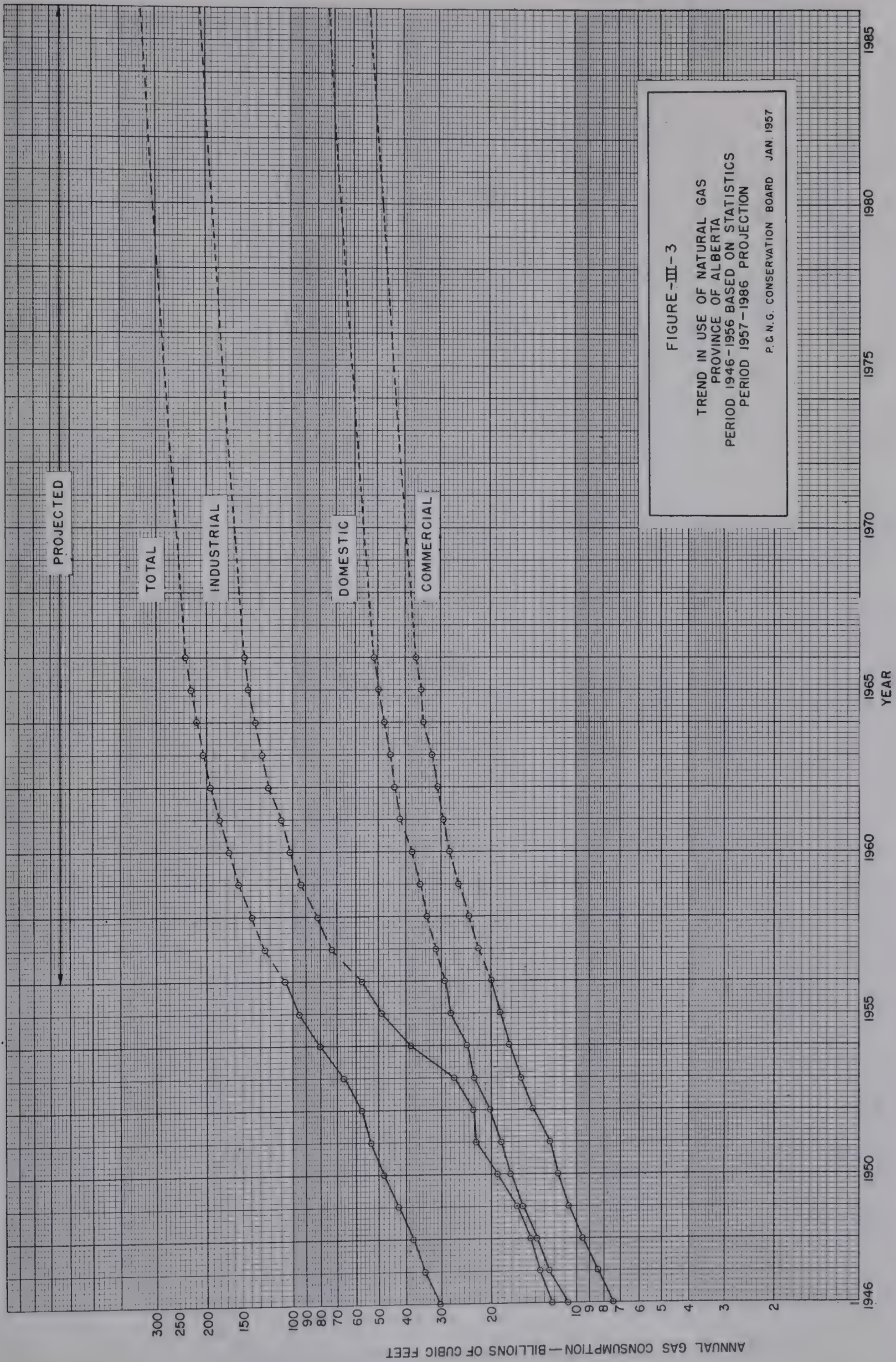
















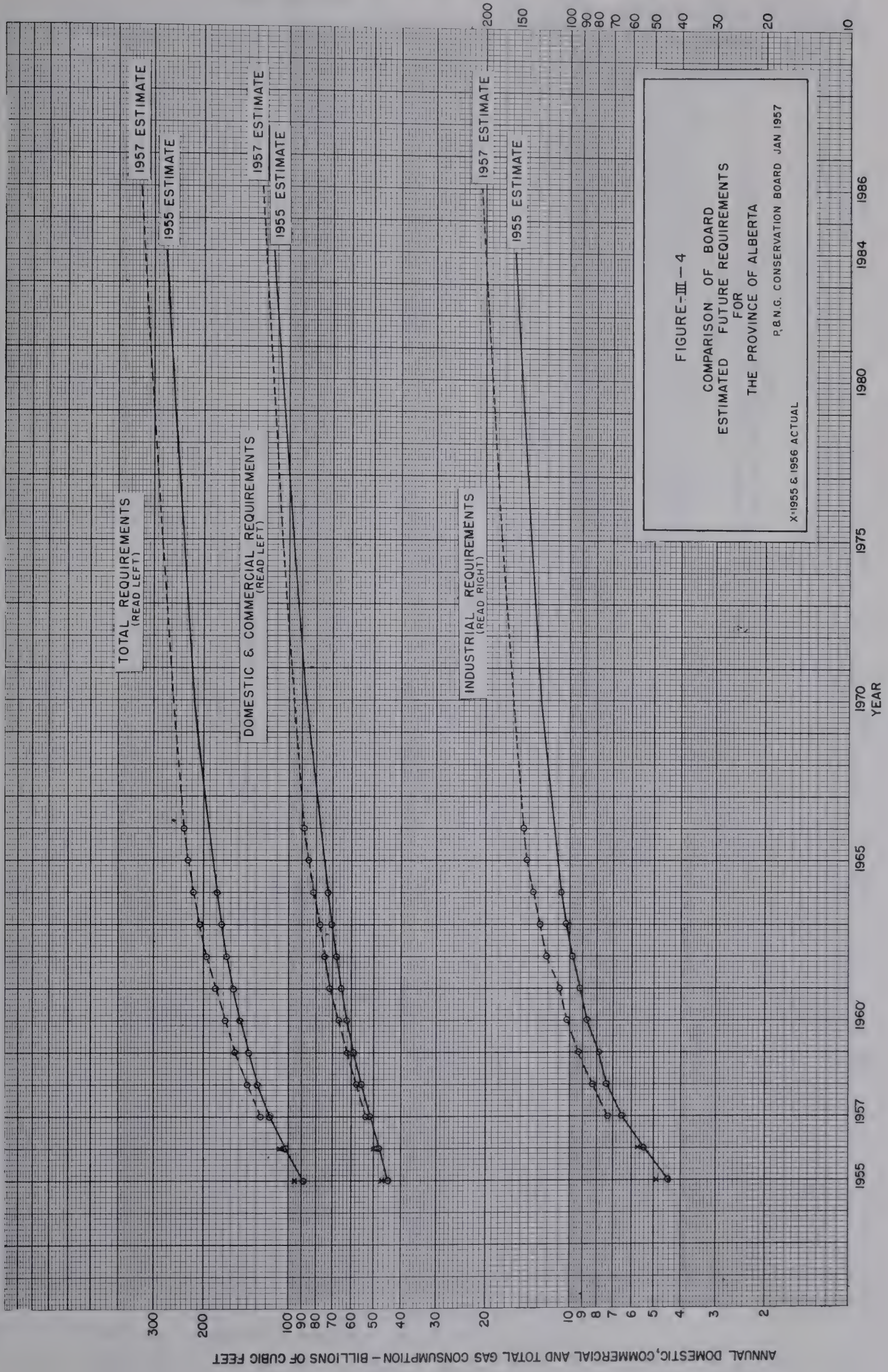


FIGURE-III-4  
COMPARISON OF BOARD  
ESTIMATED FUTURE REQUIREMENTS  
FOR  
THE PROVINCE OF ALBERTA  
P.B.N.G. CONSERVATION BOARD JAN 1957  
X-1955 & 1956 ACTUAL





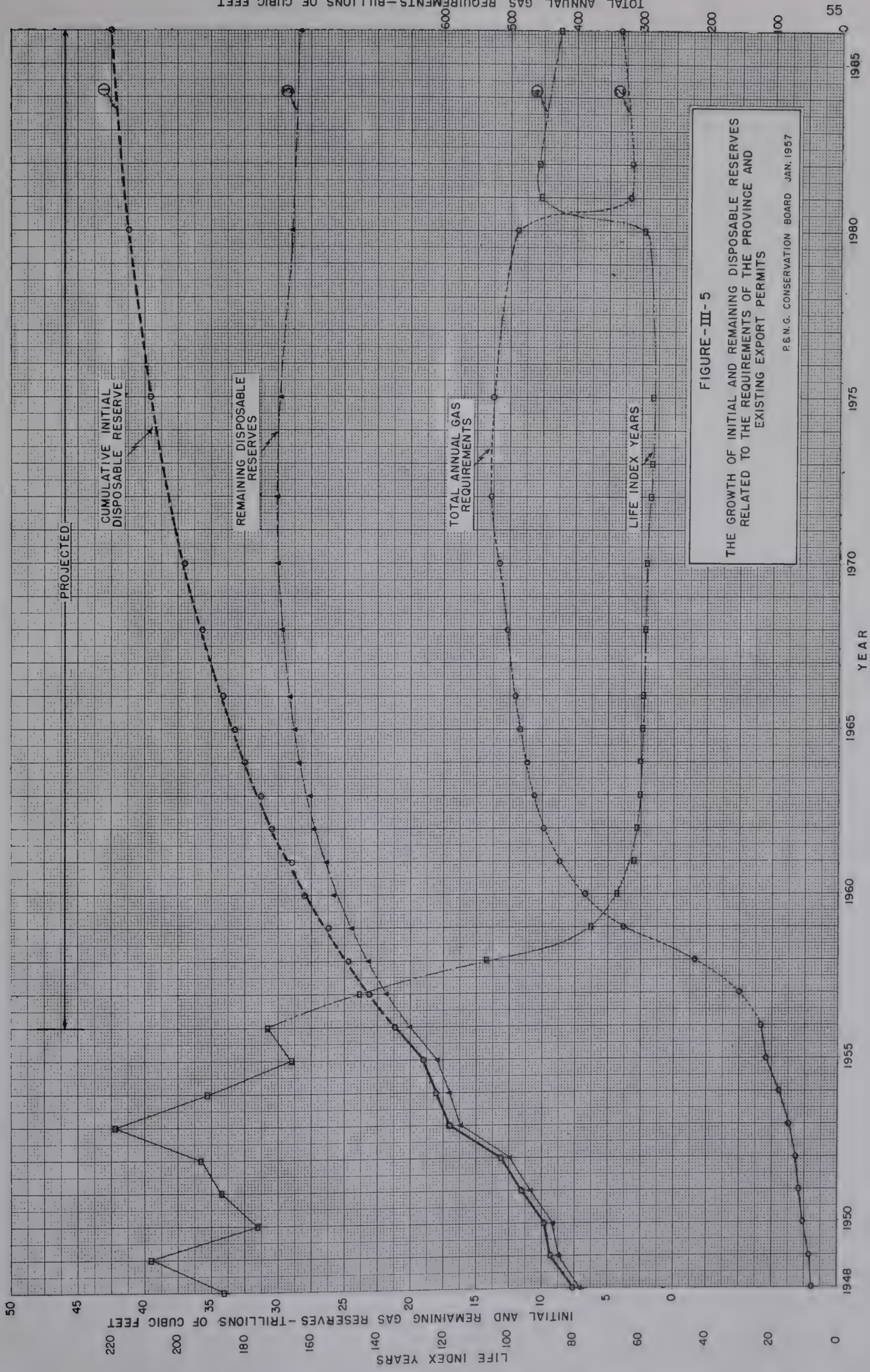


FIGURE - III - 5

THE GROWTH OF INITIAL AND REMAINING DISPOSABLE RESERVES  
RELATED TO THE REQUIREMENTS OF THE PROVINCE AND  
EXISTING EXPORT PERMITS

P.E.N.G. CONSERVATION BOARD JAN. 1957















